THE
physical therapy REVIEW

34th Annual Conference
American Physical Therapy Association
Hotel Statler Detroit, Michigan
June 23-28, 1957

Exercise Therapy of Posturally Defective School Children — BAK

The Effect of Physical Therapy on Pathological Postures with Special Regard to the Cervical Spine — LINDSTROM

Posture and Pain — TURNER

Posture Education in Finland — TAWAST - RANCKEN

Facial Paralysis of Peripheral Origin (Bell's Palsy) — BURKE

Case Report — WROE

Suggestions from the Field
TANDBERG
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Volume 37, Number 5 **May 1957**

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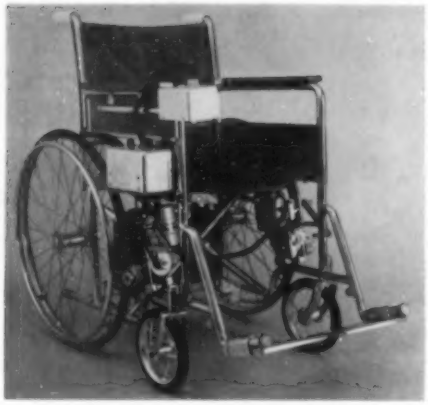

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MAY 1957
Vol. 37 No. 5

IN THIS ISSUE

Exercise Therapy of Posturally Defective School Children — Ester Ibsen Bak 287

The Effect of Physical Therapy on Pathological Postures with Special Regard to the Cervical Spine — Marta Lindstrom 292

Posture and Pain — Molly Turner 294

Posture Education in Finland — Saima Tawast-Rancken, M.D. 298

Facial Paralysis of Peripheral Origin (Bell's Palsy) — John F. Burke 301

Conference 1957 319

Regular Features

Case Report

Physical Therapy for a Biceps-Cineplasty Patient — Martha Wroe . 304

Suggestions from the Field

Water Stretcher for Full Body Size Therapeutic Tank — Gudrun Tandberg 305

Book Holder for Recumbent Patients—Katherine I. O'Neill 306

Index to Current Literature 307

Editorial 308

Association News 310

Student Column 327

Physical Therapy Programs 330

Abstracts 332

Book Reviews 339

What's New 342

Short Term Courses . . . 284

Our Book Reviewers for May 297

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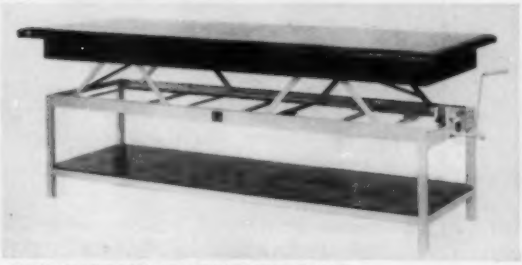

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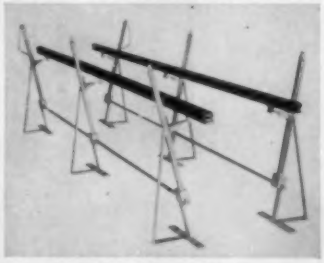

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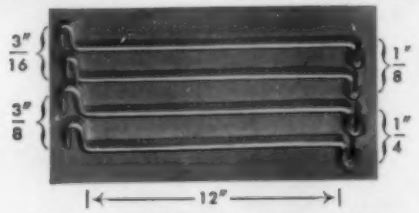

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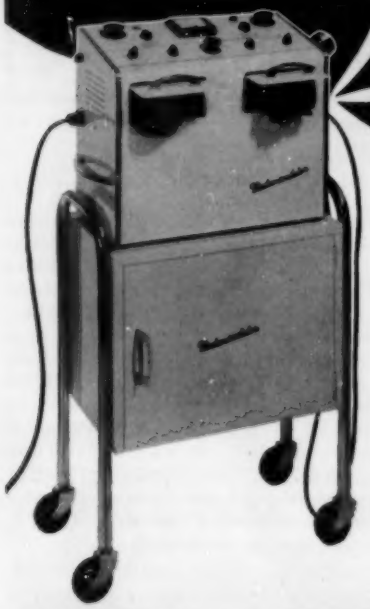

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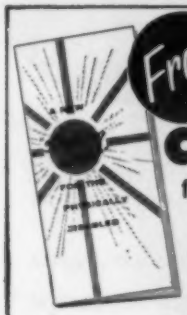

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May 5 - 10	National Tuberculosis Association, Auditorium, Kansas City, Mo.	May 22 - 24	Middle Atlantic Hospital Assembly, Convention Hall, Atlantic City
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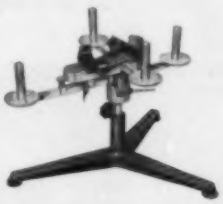

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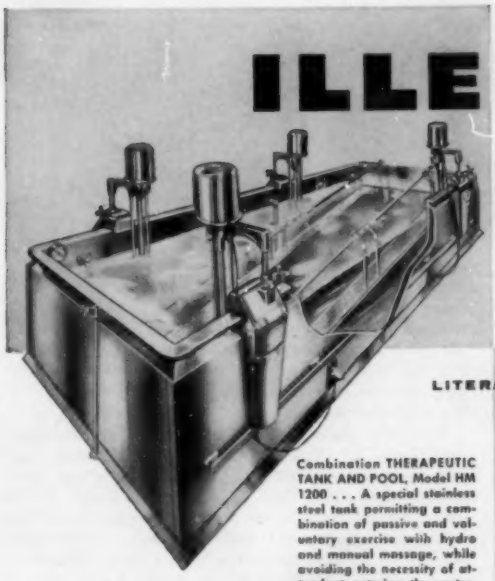

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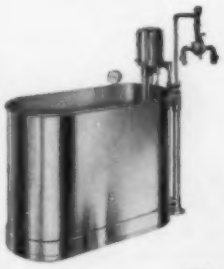

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"TAKE A FIVER"

The boss is away and his secretary is not at play. She's writing copy for *Physical Therapy Review*, and to be required to supplement the words and thinkings of a man like my boss, Mr. Birtcher, necessitated that I "take a fiver" and talk things over.

I first learned to "take a fiver" while making trail in the Yukon Territory of Alaska during the last war. In association with some Alaskan Combat Scouts I made many off-duty dog sledding and pack trips into the "bush" country. It was on the first of these many pack trips that I began to learn the power of taking a periodic five-minute rest, or, as my Scout friends called it, "a fiver." These breaks served the sole purpose of relaxing our muscles and regaining our physical strength to continue down the trail, usually with a 75-pound pack and a rifle on our backs, or a dog team loaded with perhaps 1500 pounds of equipment to handle.

Through the following five years of fulfilling a wanderlust desire to roam the North country and to fulfill a living by lecturing on my adventures, these five-minute breaks became more and more my symbol of added strength (sometimes physical, sometimes mental) to continue on at most difficult times. These were many. There was the summer I cooked in a gold mine; the summer I helped "Bush Pilots" drop their cargo to waiting miners and trappers below; the job as hat check girl in the Flame Room; the two-week stretch of isolation in a trapper's cabin; the long trek by car over the Alcan Highway; the boat trip up the Inland Passage; and many other situations which, of necessity, cannot be detailed here.

It came to follow that I had to become city bred; marriage, a steady job because I like to work. It soon became evident that "fivers" were needed in this type of life also, not for the physical gain as on the trail, but for the mental, to cope with the everyday problems of a life new to me.

More and more I have come to recognize the power of these five-minute mental breaks through the course of the day as a great tool to facing difficult situations, evaluating my work, myself, and my problems. They seem to do more than, say, working four straight hours and taking a half-hour rest. We wouldn't think of packing eight hours on the trail without resting our physical structures, yet, we think nothing of doing eight hours of strenuous mental work without resting our minds. Try it! It's extremely stimulating. Use it as a medical tool on some of your patients. (But don't overdo it or we will all be out of work.) Seriously, "take a fiver" the next time the going gets tough. You'll find it not only reflects on you but on your fellow associates and patients as well. I take mine out-of-doors where the sky's the limit.

Now, if I could only inject a bit of this philosophy into my boss! But the mind behind the man who pays you these monthly visits is one of an ever-ending, relentless flow of ideas and things to be done. Being close to his work, it is easy for me to understand because I realize what a tremendous responsibility and tireless job it is being President of a modern, progressive company. Especially so because he is a man whose ideas and faithfulness to the products he manufactures, and to the users as well, demands that these products bear the most exacting standards of engineering, design and workmanship.

Confidentially, however, Mr. Birtcher may not follow his secretary out-of-doors when she takes her "fivers" but believe you me he gets a complete "rejuvenation" when he reads your wonderful little notes commenting upon a piece of Birtcher equipment, or upon the fact that you bought a piece of Birtcher equipment because you learned to know, through these monthly advertising messages, the sincerity of purpose behind his products in making them the best that money can buy. Thanks for taking this "fiver" with me,

Sincerely yours,

Alberta Bronson

Secretary to
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The Physical Therapy Review

Official Publication of The American Physical Therapy Association

Exercise Therapy of Posturally Defective School Children

Ester Isben Bak (Denmark)

What do we mean by good posture? This question has been discussed for many years by physicians, physical therapists, as well as physical educators. I propose to phrase the question in this manner: What are the characteristics of good posture, and to what extent do they influence daily work? Can it be said to be injurious to one's health to have a poor posture? Is working capacity reduced if the posture deviates too much from normal? And most important of all, is a person's posture a relevant criterion of his or her functional ability and working capacity?

In the United States and in Scandinavia inspiring roentgenography examinations have been made of posture in recent years. Moreover, Danish investigators have examined by X ray the functioning of the spine. This work has enabled clinical results to be compared with what really happens. Roentgenography examinations demonstrated that spinal movements often differed from the clinical findings, the vertebral disks turning and bending in planes entirely different from what had been interpreted clinically.

The study of postures has for many years now been based on Brown's Standard developed at Harvard University in 1916, published by Children's Bureau in 1926. Lateral photographs of the person's shadow enable postures to be classified in four types, A - D. These types, however, do not show the shape of the spine in the frontal plane, and more especially they give no impression of the functioning of the body and the extremities. The functioning of the body is determined by the working capacity of the joints, the ligaments, and the muscles; shortening of ligaments and contracture of muscles will alter the range of movements and subsequently the functions. A child with a poor posture need not be a poor gymnast or worker; and conversely, a good posture does not necessarily ensure first rate functional ability.

Examinations of school children in Norway, Sweden, and Denmark between 1950 and 1954 have emphasized the necessity of investigating the relationship between posture and functions—similarly as functional tests are made in the fields of medicine and surgery for the purpose of studying the organs in relation to their anatomical forms.

J. Bang, M.D., K. Bojlen, M.D., and E. Snorrason, M.D., of Copenhagen, have worked with these problems for many years. Chief physician K. Bojlen gave Mrs. Britta Holle and me the assignment, between 1954 and 1955, to treat 40 school children aged 7 to 16 years who had postural defects. Before treatment they were examined clinically by roentgenography, and this examination was repeated 12 months later to allow for a reasonable period of observation.

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Read at the Second Congress of the World Confederation for Physical Therapy, held in New York, June, 1956. This paper appears in the *Proceedings*.

This work was aided by grants from the Investigation of Children's Posture Committee appointed by the Ministry of Home Affairs, by the National Association for the Combating of Rheumatic Diseases, and by the Danish Athletic Association.

TABLE I

Number of Participants According to Ages and Sex

Years	Girls	Boys
7	1	1
8	1	
9	1	1
10	3	
11	4	3
12	6	2
13	6	1
14	5	
15	3	
16	1	1
Total	31	9

We were fortunate to be assisted in the X-ray investigations by Dr. M. Schalimtzek of the Roentgenological Department of the Municipal Hospital, where in the last few years comprehensive studies have been made of the functions of the spine.

MATERIAL

Forty children, aged 7 to 16 having pronounced postural defects, were selected by Bojlen and Snorrason. Six additional children were to have been treated, but two girls and two boys were excluded owing to systemic diseases of the spine, disclosed by X ray after their selection; another girl was excluded because she showed no interest in the experiment; and as to the sixth (a girl), the parents refused to allow the shortening of her leg to be remedied by a heel raising support. Table I shows the distributions of the 40 children according to age and sex; there were 31 girls and 9 boys.

Table II shows the postural types of the group in accordance with Brown's Standard. Groups A and B were combined since it was impossible to make a fair separation.

EXAMINATION PROCEDURE

During clinical examinations the children were examined standing, completely undressed. Notes were taken on posture and mobility. Then they were photographed. Next roentgenograms were made at the Municipal Hospital. Here each child's entire spine was photographed on one plate. Moreover, photographs were taken of the child in standing and lying positions. Finally, functional investigations were made of the spine by the method of Hasner, Schalimtzek and Snorrason. This technic provides data not only as to the shape and size of the disks but also as to their functions. Dr. Schalimtzek's investigations made in recent years at Municipal Hospital and at Blegdam Hospital confirm that the outlined technic gives at least as reliable a picture of vertebral diseases as does myelography.

TABLE II

Patients Classified as to Postural Types

	Before Treatment			Total	*After Treatment*			Total
	A-B	C	D		A-B	C	D	
Girls	2	9	20	31	5	15	11	31
Boys		2	7	9		7	2	9
	2	11	27	40	5	22	13	40

RESULTS OF INVESTIGATIONS

Table III demonstrates the agreement, and on many points the disagreement, between the clinical and the roentgenogram findings.

Clinical examination of the girls revealed that 10 had leg shortening on one side with consequent secondary arcuate scoliosis (C-shaped); by X ray this condition was found in another 2 girls.

S-shaped scoliosis was found clinically in 6 of the girls, but by X ray in 15 of the girls; this fact shows the difficulty of determining mild scoliosis clinically. The more severe organic scoliosis cases are readily ascertainable, but, as shown, mild cases of scoliosis undoubtedly occur more frequently than hitherto assumed. Children should be examined by X ray not only in the lying but also in the upright position since the latter reveals a true picture of the spine.

Augmented pelvic inclination was found clinically in 10 of the girls, but by X ray in 2 only. The distribution of the subcutaneous tissue and the musculature complicates the correct appreciation of the phenomenon. Accordingly, roentgenograph is indicated in order to obtain exact data. In other words, it may be said that too much reliability is often placed in clinical examinations.

Hyperlordosis was found as a long lordosis in 5 of the girls. Accentuated lumbar lordosis was found clinically in 6, but by X ray in 15 of the children—a great divergence indeed. This also applies to accentuated thoracic kyphosis found clinically in 9 of the girls, but in 15 by X ray. In this connection it is interesting to note that Scheuermann's disease, traditionally described as a disease visible between the ages of 10 and 20 years, can be detected by X ray at an earlier stage, and has actually been found in some of the examined children below the age of 10. It is no doubt a spondylopathy on a hereditary basis.

TABLE III

Clinical and X-ray Investigations

	Girls			
	Initial Examination		Final Examination	
	Clinical	X-ray	Clinical	X-ray
Shortening of one leg	10	12	10	10
Augmented pelvic inclination	10	2	7	..
Scoliosis				
C - shaped	8	..	6	4
S - shaped	6	15	3	11
Accentuated lordosis	6	15	5	15
Accentuated thoracic kyphosis (Mb. Scheuermann)	9	15	2	10
Paresis of back muscles	3	..	2	..
Contractures of shoulders	24	..	3	..
Contractures of hips	18	..	3	..
Spina bifida	..	7	..	7
Sacralization	..	11	..	11
Lumbalization	..	1	..	1

Flatback, which has now become a fairly common postural defect—perhaps in some cases caused by excessive relaxation—was found clinically in 9 of the girls.

Now that research on poliomyelitis has created an increasing awareness of the influence of muscle contractures on posture, it is interesting to observe that 80 per cent of the girls (24) had contractures relative to the shoulders, and 60 per cent (18) had contractures relative to the hips. Three of the girls had paresis of the long back muscles with no history of poliomyelitis.

Table IV shows that 28 of the girls carried their heads forward, 21 had pendulous abdomens, 19 had wing scapulae and just under 50 per cent suffered from flatfoot. The findings among the boys equal on a percentage basis those recorded for the girls.

The results of roentgenography are given in Table III. Table III demonstrates that sacralization was of frequent occurrence, 33 per cent, which is higher than is the case in normal material where the figure is 5 or 6 per cent. It is important to bear this in mind since, in many cases, it causes spondylopathy with concomitant disk degeneration and prolapse.

Seven of the children had spina bifida, also a higher incidence than in normal material.

It is worthy of note the roentgenologist found difference in leg length in 12 of the girls, while it was detected clinically in 10 girls.

As pointed out, it now is possible to determine the shape and mobility of the disks by means of roentgenography of functions.

Normal side bending in the entire spinal column as measured by Cobb, is 8° for the upper and 14° for the lower six dorsal vertebrae, and 24° for the five lumbar vertebrae.

Clinically, 50 to 75 per cent of the children were found to have reduced side mobility of the whole spine. According to the work of Hasner, Schalimtzek and Snorrason, the relationships of the spines of the vertebrae frequently afford no safe basis for reliably determining the shape and mobility of the spine.

Roentgenography findings established, in confirmation of the foregoing observation, rather divergent figures for mobility in the thoracic and the lumbar spine. Thus, while there was not always torsion in the thoracic spine, with consequent diminished mobility, torsion was frequent in the lumbar spine when reduced mobility existed.

Hence, these children had not only bad posture, but also poor function of their backs, hips, and shoulders. But now the question is, whether the reduced function of the back is attributable to the same factors as in the hips and in the shoulders, that is, the contracture of muscles.

The X-ray investigations showed that reduced function must be ascribed to adhesions in the muscles and the connective tissue related to the spine. This has been demonstrated by Ammitzbol and Snorrason in poliomyelitis patients, and in these poliomyelitis cases neither degeneration of the disk nor vertebral diseases were traced but sacralizations and spina bifida were discovered.

Altered pelvic inclination might also be thought to cause bad posture with attendant poor func-

tion, but it was established by X ray that augmented pelvic tilt was extremely rare in the material, and Dr. Schalimtzek's calculations showed measurements of the lumbosacral and the promontorial angles to be within the normal range. This proves that the poor back function of these children bore no relation to the inclination of the pelvis nor, accordingly, to that of the sacrum.

These clinical and roentgenography findings naturally called for attempts to improve the children's posture and functional ability by means of exercise therapy; this would be unachievable by ordinary school gymnastics (indoor or outdoor training). Special exercises were indicated. This approach was further prompted by the fact that Bang and Bojlen have shown that out of 1,300 Danish school children, 50 per cent belong to posture type C, and 20 per cent to type D, and they furthermore established that, on the whole, these posture types remained unchanged throughout the school years in spite of ordinary school gymnastics.

METHOD OF TREATMENT

As shown by Table II the selected material had many postural defects. The material was poorer than children selected for similar but more extensive experiments elsewhere in Scandinavia.

The duration of the experiment was approximately 12 months, from March, 1954, to April, 1955, exclusive of the usual school holidays. The children who attended most frequently received from 40 to 50 treatments; they were given postural gymnastics twice a week. This education took place late in the afternoon and early in the evening so as to allow the children some rest after school and before treatment. (The children lived in the vicinity of the school.) The children were arranged in three teams, one for boys, one for the younger girls, and one for the older girls; no group had more than 16 children. One physical therapist read the exercises aloud and the other corrected the children's mistakes and urged them on, and as for the asymetrical exercises, showed them the correct postures.

The training schedule considered the children's different requirements: the boys lifted weights and performed exercises with gymnastic apparatus; whereas, the younger girls were given play therapy; and the older participated in more strenuous coordinated exercises. We worked 50 minutes with each class, beginning with "warming up" exercises. The first 35 minutes were devoted to free exercises—stretching exercises for the feet, the hip flexors and extensors, the flanks and the muscles of the back, and the shoulder joints. Then we proceeded to give more localized muscle training; in addition, head and neck exercises were given. All through the training we explained to the children the purpose of the individual exercises so as to make them more posture minded. For the remaining 15 minutes, exercises were done by each class in two groups. Group 1 had their contractures stretched passively and actively on a plinth. Moreover, the passive and the resistance exercises were adjusted to each child's individual needs on the doctors' advice, and special effort was made to give correct exercises for the scolioses. Children in group 2 were placed in front of two mirrors so that they could watch their own postures, the other children being allowed to look on. They were told to take up their habitual postures, which were then corrected. In this way we made the children increasingly posture minded; and we were very gratified when a mother told us that her daughter had looked into the mirror at home, saying, "Look Mummy! This is what I look like, and this is how I should look!"

In the last few months of the year we taught the children carrying and lifting procedures related to their future work.

RESULTS OF TREATMENT

Table II shows how the children's postures changed, clinically, after 12 months of remedial exercises; 3 of the girls had developed the A-B posture, and 6 the C posture. But the point is, can this be said to be a functional improvement?

Table III demonstrates what happened to the individual functions. Shoulder and hip contractures improved most; accentuated thoracic kyphosis was remedied to some extent; whereas, the results of the treatment of accentuated lumbar lordosis and flatbacks were less encouraging. From the clinical point of view the treatment of scolioses and augmented pelvic inclination was also less successful. According to the repeated X rays, the accentuated thoracic kyphosis is seen to have been remedied, but there is an increase in the occurrence of flattened thoracic spine. Certainly, the augmented pelvic inclination has improved somewhat, but the accentuated lumbar lordosis remains almost unchanged despite the treatment!

Table IV shows the myogenic postural defects, such as winged scapulae, pendulous abdomen, and flatfoot, which improved substantially. The posture of the head was normalized in 50 per cent of the children, thereby preventing them

TABLE IV

Clinical Findings

	First Examination		*Second Examination*	
	Girls	Boys	Girls	Boys
Heads carried forward	28	9	14	4
Winged scapulae	19	4	10	2
Pendulous abdomen	21	8	7	5
Genu valgus	8	5	10	4
Genu varus	4	2	1	2
Genu recurvatum	6	..	2	..
Pes planus	12	4	6	4

from developing headache and fibrositis in the shoulder girdles.

Clinically, mobility was improved both in the dorsal and the lumbar spine; by X-ray examination the results are less gratifying. Thus, in several cases the treatment caused torsion of the vertebrae and disks of the thoracic spine.

CONCLUSIONS

Twelve months of exercise therapy given to 40 school children, aged 7 to 16 years, of the posture types C and D, except for 2 girls who were of the types A-B, proves that certain practical results are obtainable. Muscle contractures in shoulders and hips can be materially improved, and myogenic postural defects, such as winged scapulae, pendulous abdomen, and flatfoot, can be remedied. However, caution is called for in the treatment of postural defects in the spine; careful clinical and roentgenograph investigations and control are required both before and during the treatment to ensure that its effects will be beneficial. Too persistent remedial exercise may in some cases give increased torsion of the spine.

This experiment shows that a thorough examination of children of these posture types is imperative, and that they must be given special treatment; ordinary school gymnastics is rarely sufficient. Furthermore, it will be possible to guide these children and their parents in regard to the children's future occupation. Children with poor back functions should not do work which may involve excessive strain on the spinal column. Such children should be instructed in the proper use of their spines.

Reduced spinal function is traceable not only to a poor development of musculature and connective tissue related to the spine, but also to an insufficiency of vertebrae and disks, i.e., an inborn spondylopathy. This is borne out by the many cases of spinae bifidae and sacralization.

Myogenic and tendogenic changes are remedial through exercise therapy; osseous and disk changes cannot be radically remedied, but the proper functioning of muscles counteracts the misuse of vertebrae and disks, reducing the possibilities of secondary consequences of spondylopathy.

The somewhat pessimistic results as recalled by the repeated X-ray examination is amply offset by the optimistic results of the repeated clinical examination, and by the established fact that such children can be suitably treated on the basis of cooperation of physical therapists, roentgenologists, and physiatrists. The children are made aware of the functional ability of their bodies, and diseases (degeneration and prolapse of the disk) which otherwise would have developed, have been prevented.

School gymnastics offers a vast field of activity for physical therapists, but such programs call for close cooperation between the schools and the doctors. I hope that this work—although it is on a small scale—will promote such cooperation.

The Effect of Physical Therapy on Pathological Postures with Special Regard to the Cervical Spine

Marta Lindstrom (Sweden)

The effect of physical therapy on faulty postures is a very wide subject indeed. Therefore, and because the time at my disposal is rather short, I shall confine these remarks to an aspect of the subject which seems rather neglected and seldom is discussed in the literature. What I have in mind is the role of physical therapy in the treatment of disorders of the cervical spine. According to experience in Sweden, faulty postures and wrong movements in this portion of the spinal column frequently give rise to discomfort and secondary ailments. A knowledge of the normal and pathological behavior of the cervical spine under stress should consequently have both theoretical and clinical value.

The cervical spine has a twofold function: it carries the head and—via the upper shoulder muscles—it supports the entire shoulder girdle as well as certain parts of the thorax. The musculature involved includes chiefly the trapezius, the levator scapulae, the cervical portions of the erector trunci, the scaleni, and the sternocleidomastoid muscles. The center of gravity of the normally positioned adult head invariably lies anterior to the small projections on the atlas that support the occipital bone. This implies that the mere maintenance of the head in its normal position imposes a small static stress on the musculature of the neck. Comparatively speaking, therefore, these muscles are much stronger than those which bend the head forward, namely, the infrahyoid and suprahyoid musculature and, to a lesser degree, the longus capitis muscle. Considering the comparatively great weight in relation to the small area of support, even fairly minor malpositions of the head may unduly stress the cervical spine. Thus, when from force of habit or other causes the posture of the head is faulty, the entire musculature mentioned will be overstressed.

Under normal conditions the cervical spine is smoothly lordotic. The first thoracic vertebra makes rather a large angle with the horizontal plane but is nevertheless fairly strongly attached to the rest of the thoracic spine. It may therefore be regarded as a firm but inclined plane for supporting the entire cervical spine. If the latter is smoothly lordotic and positioned so that its upper portion is situated more or less vertically above the body of the first thoracic vertebra, the cervical spine may be pictured as a flexible spring in a state of stable equilibrium. But the cervical spine is mobile within fairly wide limits. Study of an X-ray picture in profile of a cervical spine reveals the head positioned normally and the correct degree of lordosis. Here the same person is shown with the cervical spine markedly flexed. It will be seen that the lordosis has changed into a slight kyphosis. The next slide illustrates the marked lordosis which results when the head and neck are extended as far as possible. Lateral rotation of the head takes place mainly between the atlas and the second cervical vertebra. Lateral flexion occurs chiefly between the atlas and the occipital bone, producing only minor movements in the cervical spine itself. In diseases of the cervical spine—for example, intervertebral disk degeneration, calcification of the long ligaments or muscular contractures—the ability to perform any or all of these movements will of course be restricted.

The normal or smooth lordosis of the cervical spine cannot be maintained without the work of muscles. Owing to the inclined support for the seventh cervical vertebra offered by the first thoracic vertebra, and to the smooth lordosis where the third cervical vertebra usually lies in the horizontal plane, an overload with muscular insufficiency will for purely mechanical reasons

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Read at the Second Congress of the World Confederation for Physical Therapy held in New York, June, 1956. This paper appears in the *Proceedings*.

produce a decreased lordosis below the third cervical vertebra. It can be seen that this part of the cervical spine will therefore be straight or kyphotic. To compensate for such straightening of the lordosis, the upper portions of the cervical spine will undergo a reflex accentuation of the lordosis. Such an alteration of position will naturally displace the whole head forward. Since the weight of the head will constantly tend to augment the deformity caused thereby, the neck musculature will have to do considerably more work. Considering what has been stated regarding the functions of the cervical spine and the arrangement of the associated muscles, such a state may arise either through faulty postures of the head or through overloading of the upper limbs or, through a combination of both these factors. The presence of kyphosis gives rise to increased work for the muscles of the neck as long as the cervical spine is overstressed. Hence temporary muscular contractions cannot produce normal balance. In a situation of this kind, constant muscular strain is required, which here, as elsewhere in the body, primarily gives rise to pain and secondarily to permanent muscular contractures when the condition has persisted for a considerable length of time. Such contractures may of course affect any of the muscles just mentioned, but the trapezius, levator scapulae and erector trunci muscles are usually involved.

Some common types of malshaped cervical spines are found in subjects with painful conditions in the neck, shoulders and occipital region. There is a typical flattening of the cervical lordosis with a compensating increased lordosis in the upper portion. A peculiar variety of this is a marked lordosis basally and a straight upper portion. Another variation is a cervical spine of complicated shape, with both lordosis and kyphosis. Incidentally, sharp kyphoses are seen remarkably often in various portions of the cervical spine. Professor B. E. Ingelmark, head of the Institute of Anatomy, Gothenburg University, Sweden, has shown that such abnormalities must be considered precursors to definitely pathological states in the cervical spine. The articular processes in this region of the spine are arranged so that the upper processes project obliquely forward and upward and the others project obliquely backward and downward. The lower processes of a vertebra partly overlap like rooftiles the upper processes of the underlying vertebra. When the cervical lordosis becomes flattened these joints will be subjected to prolonged and heavy stress. This often produces degenerative lesions resembling hypertrophic osteoarthritis of the small joints. Very probably these abnormalities give rise to secondary changes in the capsules and ligaments of the affected joints and in the surrounding muscular tissues, just as one generally finds when osteoarthritis affects the joints of the extremities. Because of these changes in the small vertebral joints the intervertebral disks become unequally stressed which, in turn, probably results in degeneration of the disks. Thus, as shown by Ingelmark in a large series of subjects, the hypertrophic osteoarthritic lesions are primary and the degeneration of the disks secondary. It goes without saying that frequently disk degeneration may be the primary disorder with hypertrophic osteoarthritis and muscular contractures occurring as a secondary phenomena.

From the foregoing remarks it should be clear that the aim to strive for is satisfactory balance between the head and the cervical spine and that the cervical spine normally assumes a lordotic posture. But this cannot be achieved unless the thoracic and lumbar portions of the spine are in correct positions. Consequently corrective treatment for deformations of the cervical spine must always take into account the other portions of the spinal column. Patients suffering from such disorders generally complain of exhaustion with pains and stiffness in the neck, shoulders, upper arms as well as in the occipital region and, from time to time, the temporal areas. Such symptoms can well be explained in the light of the statements just made. Postocular pain is another not infrequent symptom. The reason for this pain has not been determined, but it is so common, and practically always disappears when malpostures of the cervical spine have been corrected, that some sort of causal relationship must be assumed.

I shall now proceed to demonstrate the most important physical therapy methods used to correct or ameliorate the abnormalities of posture of the cervical spine. (Slides were shown.)

Posture and Pain

Molly Turner (Great Britain)

The objects of this paper are twofold: first, to show the relationship between faulty posture and musculoskeletal pain, and, secondly, to outline the principles of treatment of patients suffering from pain of postural origin.

Even today, despite the great advances in medicine, the treatment of patients with pain in the back, with or without radiation into the limbs or trunk, presents a baffling problem. Many such patients are sent to departments of physical medicine. When those with diseases of bone or joint or lesions of the intervertebral disk have been excluded by careful examination, there remain many whose chief characteristic is some abnormality of posture associated with increased muscular tension. It is with those patients that this paper is concerned.

Today, the incidence of faulty posture and associated muscular tension is extremely high. This is not surprising when we consider the great strain, both physical and mental, that the pace of life in a modern civilized community imposes on the individual.

By far the commonest cause of faulty posture is muscle imbalance. By muscle imbalance I do not mean an imbalance due primarily to weakness of certain muscles. I mean the inability of the individual to detect his own postural errors, so that the body is allowed to take up positions out of balance. In other words, the body develops bad habits which by degrees (as is not uncommon with all bad habits) become worse.

Normal Posture

Before discussing the features of abnormal posture I would say a few words about what constitutes the normal. It is a mistake (and a common one) to be too rigid in one's views on normal posture. There is a wide range of normality between one person and another. Moreover, the posture of the individual is not static. The body is from minute to minute making small compensating adjustments to bring about a return to a state of balance. This constant readjustment is admirably described by Barlow (1951) in his paper "Postural Homoeostasis."

Nevertheless, it is necessary to have a rough clinical test and as a guide for the subject in a standing position the plumb line test is useful. (Fig. 1)

The plumb line is suspended from the tip of the mastoid process; it should pass through the greater tuberosity of the humerus, through the great trochanter of the femur and through a point about 1½ inches in front of the lateral malleolus.

Abnormal Posture

Whatever type of postural deformity is present, the basic factor is the same—a disturbance of balance.

Briefly the effects are as follows:

1. The mechanics of the bony skeleton are upset so that the relation of the joints to the line of gravity is disturbed and the natural curves of the spine become altered. With this alteration ligaments become stretched or nipped, giving rise to pain.
2. Muscular balance is disturbed, certain groups of muscles becoming stretched and others shortened. Two important points emerge from this muscular imbalance. First, the anti-gravity muscles work harder and are unable to obtain the physiological rest necessary for their health, so that fatigue and tension result from overuse. Secondly, the state of muscular shortening interferes with the reflex pattern. As long ago as 1906 Sherrington pointed out that, after the eye and the ear, the muscle spindle is the most elaborate sensory end organ in the body. Recent work has shown that when a muscle is shortened the muscle spindle fails to work properly and, since our detection of error in muscle tension is dependent on muscle spindle activity, a source of most important information to the brain is lost when a muscle is in a state of continuous contraction.
3. The third and most important system involved is the central nervous system which

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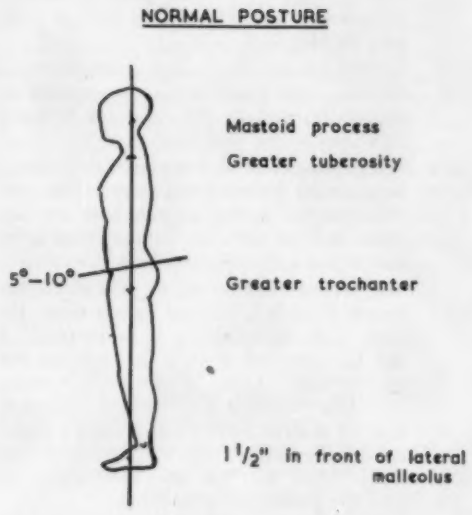

Figure 1. Normal posture. The plumb line test.

Figure 2. Abnormal posture. Note weight on right leg, rotation of hip and shoulders, and scoliosis, with crease in the right loin.

exerts its controlling power over the other two and is profoundly influenced by psychological factors. One must remember chat the postural reflexes do not instinctively keep the pattern correct. The child's equilibrium has to be learned through a long process, of which the erect posture is the ultimate achievement, and like other of man's acquirements it can be learned wrongly instead of rightly, and, even if learned correctly, it is not exempt from later distortion. In particular, anxiety is a common cause of abnormal muscle tension and may lead to faulty posture.

A common example of postural imbalance is that of a young nurse with many of the characteristic faults, namely (a) weight through the heels, (b) sabre legs with hyperextended knees, (c) forward carriage of the pelvis, (d) increase of lumbar and dorsal curves, and (e) poking chin.

Another example (Fig. 2) is that of a clerk, aged 42, who came to the hospital with low back pain from which he had suffered intermittently for 13 years. He was a tense person with a grossly abnormal posture, the chief features of which are weight on the right leg, narrowness of the chest, rotation of the right shoulder and right hip, and scoliosis with a crease in the right loin.

A third example is that of a 13 year old school girl with a typical history of pain in the dorsal region which was worse when she was tired. She habitually stood with her weight on the right leg, left knee bent, the pelvis tilted down to the left, and with a postural scoliosis. This abnormal posture is known as "shop-girl's hip."

CLINICAL EFFECTS

What clinical effects follow postural imbalance? There is pain which varies in intensity from a mere nuisance to a major disturbance. At first it usually begins during the day and is relieved by rest at night. In the absence of treatment, however, rest sooner or later fails to give relief, and pain becomes as disturbing during the night as in the day time, interfering with sleep. The most common sites of pain are in the lower lumbar and the cervical regions. There may be radiation into the limbs. When the upper cervical area is affected headaches are common and may even show characteristics of migraine.

If the condition continues without treatment for any length of time, there will be a noticeable decline in general health, usually accompanied

by psychological disturbance. Patients at this stage are often irritable and depressed. They describe themselves like this: "I don't feel myself. I used to enjoy life and be quite cheerful and now everything seems wrong. My husband tries to cheer me but he does not seem to understand and it makes me feel wild." These patients tend to become bad tempered or apathetic according to their natures. Although they may gain relief from time to time with analgesics and palliative physical therapy, they inevitably tend to relapse and, as the pain becomes more continuous, they become less able to live with it.

A much later consequence of faulty posture may be osteoarthritis of the hip, spine or knees as described by Kuhns.

TREATMENT

Early treatment of postural imbalance is obviously desirable; otherwise, in addition to pain and tension, the physical therapist will be faced with lack of mobility of joints and a faulty pattern so firmly established that it is difficult to break down. Still more important, the physical therapist will have to deal with a discouraged patient who has little faith that anything can be done.

As the essence of treatment is *teaching*, each patient presents an individual problem. However, the principles of treatment are the same whatever the type of postural abnormality, or whatever the stage the patient has reached. These principles are as follows:

1. A full and yet simple explanation must be given to the patient of exactly what is wrong and how it may be put right.
2. The patient must fully understand what has to be done. Drawings, charts and even films are valuable in illustrating this.
3. The patient must be made to realize that it is by a mental rather than a physical effort that he can overcome his faults. The postural reflexes are more quickly retrained by the conscious will of the patient than by using purely repetitive physical movement. This stage of treatment is absolutely fundamental and several sessions are often necessary to inculcate the right ideas.
4. From the beginning the patient must be self-reliant in carrying out, after instruction by the physical therapist, all the work between visits. At first the patient may come twice a week to the physical therapy department, but very shortly once a week may be sufficient.
5. Correct weight distribution is taught using mirrors, and encouraging the patient to appreciate mentally the difference between right and wrong posture.
6. The faults, such as hyperextended knees, hips too far forward and poking chin, are demonstrated to the patient, both by diagram and on his own body. Then he is shown the corrected positions.
7. The patient must be shown how to reduce muscle tension to normal muscle tone. He often finds this difficult to accomplish. I use the contrast method by making the patient first tighten a group of muscles and then "let them go." By the exaggeration of muscle contraction (during tightening) the patient gets the feeling of tension. When he "lets go" completely, he gets the feeling of relaxation.

   The patient must constantly be on the watch for his own tension habits, such as hunching shoulders and frowning. The importance of relaxation cannot be too fully stressed. Even if the mechanics of the body have improved, some pain will persist if muscle tension remains.
8. So that the correct positions can be adopted, joint movements must be complete and if any limitation exists, such as a stiff neck, the physical therapist must gently mobilize the joint and restore full movement.
9. Breathing exercises are taught with emphasis on expiration to mobilize the chest, assist relaxation and improve general health.
10. For those patients in whom muscle tension and postural deformities result from anxiety states, the assistance of a psychiatrist is an essential part of the treatment.

RESULTS OF TREATMENT

The young nurse after twelve treatment sessions over a period of ten weeks demonstrated even distribution of body weight, no sabre legs, or hyperextended knees, hips correctly placed, normal lumbar and dorsal curve, and no poking chin. Pain began to diminish after three weeks' treatment and had disappeared altogether in eight weeks.

The clerk (Fig. 3) after fourteen treatments over a period of ten weeks had improved his physique with redistribution of body weight, rotation of shoulder and hip corrected, raised sternum, rebalance of head and shoulder girdle. Pain started to improve after two weeks' treatment and disappeared in nine weeks.

The school girl now habitually stands with the weight through both legs. There is no tilt of pelvis, no scoliosis. Pain improved after a month's treatment and disappeared after eighteen treatments had been given over a period of twelve weeks.

Figure 3. Patient in figure 2 after 14 treatment sessions over a period of 10 weeks.

SUMMARY

1. Faulty posture with muscle tension is a common finding today in members of a civilized community.
2. The most common cause of faulty posture is *not* primarily, as is often thought, weakness of certain muscles; it is muscle imbalance, resulting from the inability of the individual to detect his own postural errors.
3. Pain is an almost inevitable consequence of faulty posture.
4. Long standing postural pain results in a decline in the general health of the individual, with both physical and psychological manifestations.
5. The essence of treatment of postural pain is the reeducation of the patient's postural pattern.

The treatment of postural pain is not an easy task for the physical therapist, but it is a rewarding one. It is necessary to study the patient from the physical, mental and social points of view, and great patience and perseverance are often required.

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Posture Education in Finland

Saima Tawast-Rancken, M.D. (Finland)
Read by Sylvia Honka

Early in this century educators in our schools gave much attention to teaching children to bear themselves properly and to correcting postural defects by special exercises. The idea of a good posture at that time was very different from that held today. The pupil was taught to stand straight by pulling back the shoulders and tensing the muscles of the back. The chest was pushed forward and the abdomen was made to look as small as possible by contraction of the abdominal muscles. Good bearing was thought to demand a posture attainable only by continuously holding the muscles tense. Belief in this, shall I say, "anatomical," good posture was quite deflated, when it was realized that many people whose posture left a great deal to be desired were capable of strenuous physical efforts—for instance, in sports which demanded endurance. The anatomical posture and physical endurance did not appear to go hand in hand, as was assumed previously; it seemed that good physiological functioning was possible within an anatomically faulty framework. This discovery proved fatal to posture exercises. Yet there are still teachers of physical training who, while they no longer attach great value to the formal aspect of the exercises, consider that everything is all right as long as the exercises stimulate the organs physiologically and are fun for the pupil.

There is more to the matter than this, however, as is obvious from experience gained in recent years. Fatigue, painful conditions, and debilitating diseases of the motor apparatus have been on the increase from year to year and are encountered in younger and younger age groups. Those parts of our motor apparatus which, owing to the disturbed statics of the posture, have to carry an excessive load, deteriorate before the other parts. Hence posture is important for the preservation of the motor apparatus of our bodies. Although a young person with poor posture may achieve a sound physiological condition, his bad bearing will, in the long run, prove detrimental to him. We should possess both a good posture and a good physiological condition. The view accepted nowadays is that a good posture is impossible without proper functioning of the body; a good posture is regarded as the ability to take up positions and perform movements in a way which favors endurance and the development of our bodies. Thus, it is not only a position achieved by active muscular tension but a condition resulting from the joints having retained their normal mobility and from strong muscles correctly related to each other in length and strength.

The most common cause of the postural defects so numerous today seems to be weak muscles. We can no longer speak of the classical postural defects of earlier days, but of a general lack of bearing. People living under civilized conditions appear to be frightened of physical effort. Muscular work is restricted as more and more machines are invented, and the utilization of mechanical transportation over short distances is becoming more and more widespread. The fundamental prerequisite for the attainment and maintenance of a well conditioned motor apparatus is adequate and varied exercise. Only then can the nutrient substances available in our bodies be accumulated in the form of living tissue. Exercise alone can strengthen the muscles, and thus help to meet the prerequisites for attaining a good posture.

It has been said that a good posture is principally a psychic quality. This is true, but we must also possess certain physical qualities before the psychic condition is able to manifest itself in us. These prerequisites should be present during childhood. Anybody who is engaged in posture correction work knows how difficult it is to correct faults after the equilibrium of the whole body has already adapted itself to the faulty posture. This is why it is frequently concluded that exercise generally effects little improvement in posture. A child's posture should be developed before defects have become established. We must

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make plans for special training in good posture, by means of which the motor apparatus can be kept in good condition, both anatomically and physiologically, from the cradle to the grave.

Walking erect has compelled man's hip joint and spine to assume new positions. His hip joint and lumbar region must be extended before he can rise from four legs onto two. The human race practiced this transition perhaps for millions of years before man was finally able to stay erect. A newborn child does not possess this faculty but has to acquire it during the early years of life. For this purpose, he must first train the extensors of the spine and the hip joint, and crawling on all fours is the primitive method by which this is achieved. The child must be given the opportunity to do this, and the play-pen, which has gained so much popularity in the last 20 to 30 years, does not meet requirements in this respect. It does not provide sufficient space for crawling but, on the contrary, tempts the child to stand too soon. By holding onto the bars of the pen, the child can easily assume an erect posture at a stage when the spinal muscles are not sufficiently developed. The position of the leg may be permanently disturbed by this premature loading. Children must be given their freedom and encouraged to play games and do exercises that develop the extremities and back muscles. These exercises should be designed to develop the strength of the extensors in the lumbar region and of the hip joint and also to produce well conditioned abdominal muscles.

If the child is allowed to sit too much before he learns to walk, the back becomes bent at the loin. The child sits passively locked in this position and the extensors of the spine cannot develop. The loin is tilted backwards, and the rest of the back forms a long curve. When a child plays in this posture, only the muscles of the anterior part of the body are actively functioning. The spinal muscles are overlengthened and remain weak, while the muscles of the anterior part of the body develop but remain too short. If the child has rickets, a permanent backward curvature, lumbar kyphosis, also will form in the upper lumbar and lower thoracic region. When the child stands, such a spine is incapable of taking up the normal lumbar lordosis, and the erect posture must be maintained by means of a different mechanism. In a normal spine the lumbar lordosis extends in a gradual slope up to the level of the tenth thoracic vertebra but in cases where this region has stiffened and in addition curved in the opposite direction, only the lowest lumbar vertebrae adapt. Here a limited but fairly marked lordosis develops over a short region, and as a result the posterior region is pushed backward. The hip joint remains slightly flexed—a factor that adds to the backward projection of the seat. This posture has a typical influence on the walking of the child: he continues to totter at an age when he should have learned to walk properly. The development of a correct erect posture requires a supple spine, but also well developed extensor muscles.

More widespread among our children than the above deviation is another method of attaining erect posture which differs from the normal. When the child stands, the spine is supple but the muscles which have been overlengthened are unable to form the firm lordosis indispensable for a correct posture. It is strenuous to maintain the position with these weak spinal muscles; thus, the child instinctively assumes a position he can maintain passively. The body is tilted backward from hip joint so that anterior structures become overstretched, hip extensor action is precluded in this posture. This posture is governed by the iliofemoral ligament. The posterior is pushed downwards, as it were, and appears to be small. To maintain equilibrium the spine must compensate with a kyphosis and the chin has to be thrust forward. The abdomen is pushed abnormally forward. This is the posture, so popular lately, adopted by mannequins and imitated by many young women. The posture is emphasized by the straddling of the legs which seems to be typical of the "A line." It is now very common among school children, both boys and girls. At an early age the back is still soft, and the posture can be straightened by applying tension in the back muscles, but even then the spine will not assume a normal form but is straightened into a flat, board-like back. This shows clearly that the posture is a result of a weakly developed back which, by following the law of least resistance, has adopted the above position. A feature common to persons with this posture is the poor development of their muscle sense. They must undergo long training before they learn to find the desired position. A continual load on the back in this faulty position will finally stiffen the back, and the incorrectly placed load may easily cause a bend to one side, scoliosis. In fact, it is common for the next phase to be a long leftward curvature of the spine and a hardening of the kyphosis; when this occurs the child is no longer capable of extending his spine by active muscular work. These defects are frequently to be found in the backs of upper grade school children. Admittedly, there are also instances of

the old classical posture defects, such as kypholordosis and kyphoscoliosis, but the former group of defects constitutes the real problem for modern posture training.

What steps have been taken to improve matters? As the cause dates back to the early days of life, the work had to commence at this stage. Efforts have been made to disseminate information among mothers and nurses by lectures and articles. In Finland the matter has been taken up by the Mannerheim League for the Protection of Children which has had a "Children's Posture ABC-Book" written and printed. It is now distributed to expectant mothers in the maternity parcel provided by the State. The book indicates, by means of simple rules and pictures, how the mother should care for her baby so that he is given the opportunity to develop his posture. No gymnastics are involved but suitable conditions for posture development in everyday life are described, such as advice on the baby's bed, good lying position, and the correct way of carrying the baby. By means of lectures and articles the problem has been brought to the attention of the nurses and physicians at the advisory clinics for children. Due to the force of circumstances, advisory clinic work thus far has been concentrated on nutrition and immunity from disease; now it is time to devote more attention to providing children with good general resistance to disease. Children's visits to the advisory clinics usually cease at the age of 2 to 3 years after all the necessary vaccinations have been effected, and hence an interval of 4 to 5 years remains when the child is not under continuous medical control. The advisory clinics, however, are intended for children up to the school age, i.e., 7 years of age. The introduction of posture control and advice would keep the children in touch with the clinic until they are transferred to the school physician. The organization of such advisory clinic work would be an important step indeed in posture training. The parents often console themselves, on finding deficiencies in the posture of their children, by thinking that the matter will be attended to at school. Unfortunately, the delay often leads to the development of faults which cannot be completely corrected later.

The second stage in posture training is at school. For this reason teachers of school hygiene should devote more attention to this subject; they should not be satisfied with the pictures and descriptions dating from the early years of this century, which are still reproduced in textbooks. In the training of teachers of gymnastics and physical therapists full scope should be given to the teaching of posture training. The choice of physical training exercises leaves a great deal to be desired in this respect. Women's gymnastics, for instance, bear the inheritance of a marked fear of sway-back. In former days, there may have been some justification for it, but in present-day gymnastics it has resulted in an exaggerated straightening of the lumbar region of the spine. A strong back must show a moderate lumbar lordosis, and if at the same time the muscles of the abdomen and back are firm and of suitable mutual length, the back will be both beautiful and strong. In order to develop, the muscles require stronger work than the present dynamic training often is capable of giving. Between the dynamic movement exercises there must be inserted plenty of static exercises requiring maximal muscle work of short duration.

The next stage in posture training comes at the place of employment. Suitable work tables and chairs, a correct working position in which the worker is taught to avoid continuous static muscle tension, relaxation exercises, and muscle-strengthening exercises to counteract the effects of the work, are a guarantee that a worker's posture will be able to withstand the work. Practical experience has proved this to be true. An increasing number of workers are capable of doing their work without fatigue and pain, and this is due solely to their carrying out the daily gymnastic exercises planned specially for them. These exercises are designed to keep the back mobile and the muscles in good condition. Similar treatment in pathological cases often provides better relief of symptoms than passive support; this is a fact witnessed often enough by all physical therapists.

The results of posture education will, naturally, become evident only gradually in future generations. But before that time we need advisory clinics for posture to correct existing faults, and such advisory clinics have been in operation in Finland for over ten years. At the moment there are six of them. The task of extending the network has been hampered by a shortage of physicians and physical therapists specializing in this work, and lack of funds. The general experience is that existing postural defects are difficult to correct. Correction requires extremely intensive work and is expensive because in severe cases continuous training is required under the physical therapist's supervision. Hence we have been unable to devote too much attention to the anatomical correction of the fault, but we have tried to train our patients to develop the powers

by which they will be able to improve the appearance of their bearing and to experience less strain and pain. In this sense posture gymnastics are always a worth while proposition. This is seen with particular clarity when faulty postures due to purely pathological reasons have been improved by physical therapy. Naturally it is difficult for the person with a poor posture to continue physical therapy throughout his life, therefore, we try to find a suitable sport involving a form of movement that will be beneficial in fighting against the faulty posture. For instance, skiing in the winter and swimming in the summer are suitable exercises. The exercise may consist of gymnastics, sports, or various games, as long as the form of movement involved is correct. In some cases two different types of exercises are necessary before the training program can meet all requirements. In selecting exercises the subject's preferences also should be taken into account as he must be sufficiently fond of the sport to pursue it constantly from year to year. At the same time his sport will provide a means of testing his physical condition, and by noting his performance he will be able to check his condition from year to year. An exercise highly suitable for reconditioning the back and legs is a brisk walk. When taking a step the leg must rise properly from the ground so that the extension movement extends all the way to the lumbar region of the back.

Posture education as described here has just been started in Finland; however, we are convinced that it is essential and that it should form an important part of general health education throughout the civilized world.

Facial Paralysis of Peripheral Origin (Bell's Palsy)

John F. Burke, M.A.

Facial paralysis can be caused by exposure to cold, hemorrhage, meningitis, head injuries, middle ear infections, tumors, and may be associated with other diseases. The responsibility of the physical therapist lies in recognizing that Bell's palsy is primarily an involvement of the muscles innervated by the seventh cranial nerve; however, depending upon the etiology, one or more of the fifth, sixth, eighth, eleventh or twelfth cranial nerves may also be affected. Since the fifth, sixth, eleventh and twelfth cranial nerves carry motor fibers to muscles that might need reeducation, the therapist must be aware of these factors in order to have a clear picture of the total involvement.

The treatment of Bell's palsy can be described as three stages: palliative, assistive, and functional. The stages of treatment may overlap considerably, and the duration of time for each stage is variable depending upon the patient's progress.

The primary objectives in the acute stages of the disability are to utilize the modalities most effective for relief of pain, to support the weakened muscles, and with electrical stimulation applied to isolate motor points.

Nonluminous infrared and massage are the modalities indicated for relief of pain; however, as soon as the acute pain is relieved, massage should be discontinued. The author believes that massage continued beyond the acute stage often actually traumatizes the weakened muscles and is a definite contributory factor in many poor results. When the acute pain has subsided, electrical stimulation is indicated. Massage preceding this stimulation will tend to diminish response.

Support of involved muscle groups is important

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through the entire period of convalescence until the muscular imbalance has been corrected. If weakened muscle groups are overstretched by the normal antagonist groups over a period of time, it is detrimental to the effects of electrical and functional reeducation. A patch over the eye is the most practical and efficient method of protecting the intrinsic muscles of the eye and the extrinsic muscles in the immediate area. Also, it serves to protect the cornea of the eye against drying and trauma. To support the involved side of the face, a wire splint from the posterior portion of the ear to the corner of the mouth is the common technic used. This device is satisfactory in supporting the weakened musculature, and since it can be moulded readily is practicable.

In some patients there is a spontaneous response to heat and massage. If this occurs, the patient should be continued on this type of program until he reaches a plateau, or at least until the pain subsides. During treatment in the acute stage a mirror should be placed so that the therapist can point out the involvement to the patient and orient him concerning the anticipated treatment program. The final stages of the acute phase treatment consists mainly of locating the motor points on the involved side of the face and establishing a methodical pattern of electrical stimulation and reeducation. This method of early observation and orientation enables the patient to cooperate and assist more effectively as the treatment program gradually progresses to the assistive stage.

The assistive stage of treatment is the period where electrical and manual muscle reeducation are indicated. The normal coordinate patterns of most of the facial muscles are to contract bilaterally; however, some of the facial muscles will respond unilaterally if a person deliberately attempts to initiate the contraction. For example, a person normally closes both eyes at the same time but, if the occasion arises, he or she may wish to wink one eye. The orbicularis oculi therefore can be contracted unilaterally or bilaterally. In specific muscle reeducation of this type, controlled isolated contractions are indicated where possible until the muscle or muscle group reaches a functional level.

In Bell's palsy two types of specific muscle reeducation are recommended—alternating and bilateral contractions. Alternating contractions, as will be described in detail later, consist of teaching the patient the exact isolated muscular contraction on the uninvolved side of the face, then asking the patient to attempt the same isolated movement on the involved side in correlation with the therapist's assistance electrically or manually. Bilateral reeducation differs in that the patient is taught to contract the muscle or muscle group bilaterally, synchronizing his contraction on the uninvolved side with the physical therapist's assistive electrical or manual contraction on the involved side. For many of the muscles or muscle groups both alternating and bilateral contractions can be utilized depending on the involvement and the patient's ability to coordinate or isolate muscular contraction.

The technic used in alternating reeducation follows the basic principles of muscle reeducation. The patient is taught the exact pattern of movement on the uninvolved side. Then he is asked to attempt to initiate the movement on the involved side, synchronizing his attempted movement with the therapist's assistance electrically or manually. The patient should not be allowed to attempt any assistance to the galvanic stimulation until a subnormal response can be elicited. If the patient attempts to actively assist before this level is attained, he will tend to develop incoordinate substitution patterns which are difficult to correct once they are established.

The same assistive technic is followed with faradic and manual assistance. The modality used will depend on the degree of regeneration or return of function. Reinnervated facial muscles sometimes respond in a different fashion to faradic stimulation than do skeletal muscles, for their reaction of regeneration may not be identical. Theoretically, the patient should not be able actively to assist a galvanic response until he responds to faradic current; however, infrequently minimal active contractions on the involved side are perceivable before the patient responds to faradic stimulation. Evidently in these instances the area of stimulation is so sensitive that the patient cannot tolerate enough faradic current to elicit a response; therefore, the patient should be encouraged to assist the muscle response to the galvanic stimulation. The patient should be instructed to use a minimal assistive effort in the early stages of galvanic stimulation in order to prevent incoordination. As the responses to galvanic current become sharper and the patient begins to respond progressively to faradic and manual assistance, the patient's effort on the uninvolved side and his assistive effort on the involved side should be increased accordingly.

Basically, the same technics are utilized in bilateral reeducation. The most important factor in bilateral reeducation is teaching the patient to control the power and synchronization of the

muscular contraction on the uninvolved side. The motion on the uninvolved side should be carefully controlled so that it is equal in power to the response that can be elicited with electrical stimulation or manual assistance to the involved side. Then the same progressive pattern of increasing the power of contraction on the uninvolved side in relation to the sharpness of the galvanic, faradic, or manual assistive responses is followed.

The facial muscles that respond most effectively to alternating contractions are the caninus, orbicularis oculi, resorius, zygmaticus and masseter. The remaining facial muscles are reeducated more effectively through the use of bilateral contractions. Depending upon the coordination and involvement of the patient, some of the above listed muscles may be reeducated more efficiently with bilateral or perhaps a combination of both types of reeducation.

The functional stage of rehabilitation in Bell's palsy is reached when active contraction can be seen or palpated in most of the muscles and muscle groups involved. This stage varies widely since some of the muscles will reach a functional level while others will still need assistance electrically or manually. In this stage most of the involved areas will chiefly need manual assistance to increase the strength and range of motion. In manual assistive exercises for facial paralysis the basic principles of specific muscle reeducation are again followed. Allow the patient to initiate and actively contract the muscle or muscle group as far as possible, then assist him manually through the full range of motion, remembering that in bilateral reeducation the patient's active contraction on the uninvolved side should correlate as closely as possible with the active and manual assistive contraction on the involved side. Some of the individual muscles and groups are difficult to assist manually but, with close observation of the normal responses on the uninvolved side and the responses to electrical stimulation on the involved side, various assistive technics can be devised.

As the muscular contractions reach a functional level the patient is placed on an exercise routine comparable to a home treatment program even though he may still be hospitalized. He is instructed in exercising the involved areas in front of a mirror frequently and for short periods of time. The duration and frequency of contractions will depend on the fatigability of the involved muscles. As the muscles reach a functional level, the supportive apparatus may be gradually removed. The patch over the eye may be removed as the orbicularis oculi progresses to a functional level. As strength increases, the supportive device from the ear to the corner of the mouth is released for varying periods of time until the muscular imbalance has been relieved and the support can be discarded.

This guide for an organized treatment program to correct muscular imbalance by utilizing the basic principles of specific muscle reeducation may be varied considerably depending on the physical therapist's individual characteristics and ingenuity. Often patients are encouraged to whistle, wrinkle their eyebrows, and to make other gestures throughout their convalescence. This type of therapy tends to strengthen the stronger muscles and sacrifice the weaker ones. Sometimes the results in Bell's palsy are discouraging regardless of the type of treatment program pursued, but more beneficial results will be obtained from a program that emphasizes early supportive apparatus and carefully graded electrical and functional muscle reeducation.

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Dues Notice

Annual dues were payable on May 1st. Your prompt response will be appreciated as a service to the Association and to insure your uninterrupted receipt of the *Physical Therapy Review* along with other membership privileges. Those who are not actively practicing physical therapy may apply for inactive membership.

Case Report

Physical Therapy for a Biceps-Cineplasty Patient

Martha Wroe, M.A.

W.F.T., a 34 year old male, on Aug. 3, 1956, sustained an injury at his job as metal polisher which resulted in the loss of his arm. The site of amputation was 7 inches below the elbow. On Nov. 24, 1956, an orthopedic surgeon performed a biceps cineplasty. The postoperative course of the patient was uncomplicated, and the stitches were removed December 8. On December 11, physical therapy was initiated on a daily basis. Simultaneously, the prosthetist began the fitting and fabrication of the prosthesis. The cable control assembly developed by the University of California at Los Angeles for use with biceps cineplasty, and the hook (voluntary closing) from the Army Prosthetic Research Laboratory were prescribed following a conference of the amputee team (physician, prosthetist, occupational therapist, and physical therapist).

Chief Physical Therapist, Rehabilitation Institute, Kansas City, Missouri.

The objectives of the physical therapy program were to:

1. Passively stretch the biceps tunnel;
2. Teach dissociation of biceps tunnel action and stump flexion;
3. Proceed from active to weight-resistive exercises to biceps tunnel and to stump flexion;
4. Increase elbow flexion using a constant weight pull;
5. Instruct patient in home care exercise program;
6. Instruct patient in care of the biceps tunnel.

The first day of treatment consisted of passive stretching of the biceps tunnel by the physical therapist and patient. The patient learned at this time to contract the biceps tunnel actively without using stump flexion and to flex the stump without using the tunnel. These exercises were to be continued at home.

Goniometric measurements taken showed normal range of all shoulder motions—elbow flexion to 70 degrees and elbow extension —10 degrees. Approximately 10 degrees of residual stump pronation and supination remained.

By the third day resistive exercises were started to strengthen flexion of the elbow by attaching weight to the tunneled biceps and to the stump. An attachment made of piano wire was connected to

Figure 1. Resistive exercise to biceps tunnel.

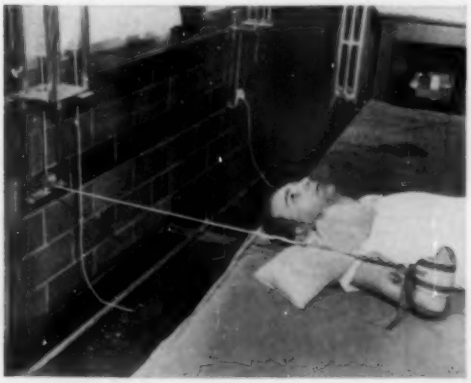

Figure 2. Weight stretch to help increase elbow flexion.

the tunnel pin (Fig. 1) and weights were suspended. A cuff with attached weights was secured to the forearm stump in an attempt to develop the residual brachialis and brachioradialis muscles, and to increase the range of motion in the elbow. The patient started with 1 pound of weight for both exercises. Increasing the range of flexion of the elbow was done with a constant stretch by weighted pulley for 20 to 30 minutes daily (Fig. 2).

At the end of the second week of treatment the patient received his prosthesis, and training in its use was started in occupational therapy. At the last visit, the patient could lift 30 pounds with the biceps tunnel, elbow extended, and 40 pounds with flexion of the elbow. Fifty to 75 repetitions were performed in both exercises. Occupational therapy and physical therapy were continued daily for 4 weeks at the end of which time the physician determined that the patient had attained maximum benefit and all treatment was discontinued. Flexion of the elbow had increased to 115 degrees and elbow extension was now normal. The patient was instructed to continue a home exercise program and in all daily activities to practice use of the prosthesis.

On Feb. 7, 1957, there was a final checkout by the treatment team which consisted of an evaluation of the patient with his prosthesis. The patient met the essential requirements previously established by the Upper Extremity Prosthetics Research Group. These included the operation of the terminal device in different arm positions, compression fit and comfort of the prosthesis, control system efficiency of the cable assembly, and the required range and prehension force for the biceps tunnel.

The patient has since returned to employment in an industrial plant.

Suggestions from the Field

Water Stretcher for Full Body Size Therapeutic Tank

Gudrun Tandberg, B.S.

The photograph illustrates a water stretcher, constructed for a locally built, modified type of Hubbard Tank. It is made of stainless steel tubing $1\frac{1}{16}$ inches in outside diameter.

Eight metal half rings, which are spaced two at each end, are placed horizontally rather than vertically. This feature permits rolling or sliding the patient on and off the water stretcher without lifting and jarring him in order to clear the hooks.

The metal bar with adjustable sleeve attaches above to the electrical hoist and to the water stretcher by metal cable and fasteners. The metal bar has perforations at regular intervals for the sleeve fastening screw. The adjustability of the screw and hook carrier insures proper leverage and balance of the patient on the stretcher. Additional adjustment in leverage may be made by attaching the cables to selected metal half rings at the sides of the water stretcher.

Director of Physical Therapy, King County Hospital System, Seattle, Washington.

This is the first of several innovations in physical therapy equipment from the King County Hospital System, Seattle, which will be described by Miss Tandberg.

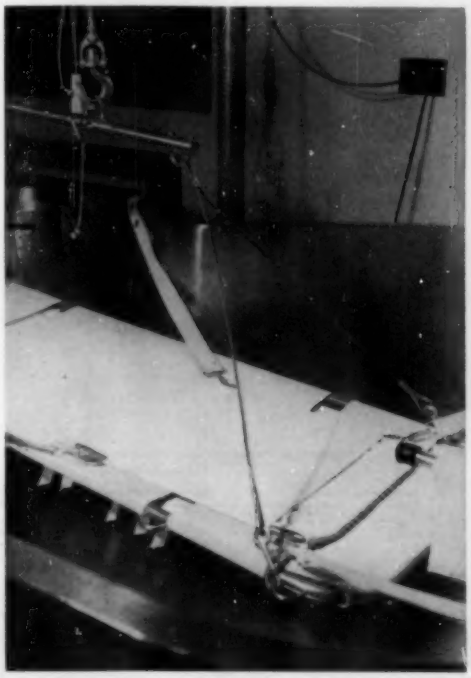

Figure 1. The stretcher is 72 inches long and $26\frac{1}{4}$ inches wide. The metal bar is $24\frac{1}{4}$ inches long. A 6-inch sleeve with a half ring and set screw on the overhead bar permits easy adjustment of the balance of the stretcher and patient.

Book Holder for Recumbent Patients

Katherine I. O'Neill

The accompanying sketches and photograph illustrate a simple, light and easily adjustable reading rack to hold a book or small magazine in a comfortable reading position for a patient lying on his back or side. The book is held in place by two straps as shown in the picture. A number of the pages to be read are allowed out of the straps and held by the right wire finger. As these pages are read, they are turned by the patient and slipped under the left wire finger.

This piece of equipment can be made from standard ¾" lumber and a small amount of ¼" and ½" plywood. It should be assembled using ¼" bolts, washers, and wing nuts. The fingers are made from ⅛" common steel wire which is easily bent to conform with the book in use. High carbon steel was found to be unsuitable because of the difficulty in such adjustments.

If necessary it may be accompanied by a light, rubber tipped dowel to act as a manual or mouth operated page turner. The page turner can be made of balsa wood, tipped with sponge rubber.

Physical Therapist, Instructive Visiting Nurse Association of Baltimore City, Maryland.

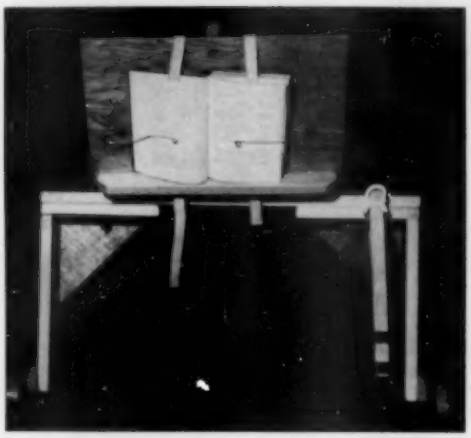

Figure 2. Straps and finger wires secure pages.

If it is to be held between the patient's teeth, it should be fitted with a ¼" plastic tubing mouth piece.

The Instructive Visiting Nurse Association gratefully acknowledges its indebtedness to the late Bancroft C. Hill, Consulting Engineer. Mr. Hill devoted many hours to the planning and construction of various devices to be used by the handicappd. Making their lives more useful and productive was his joy.

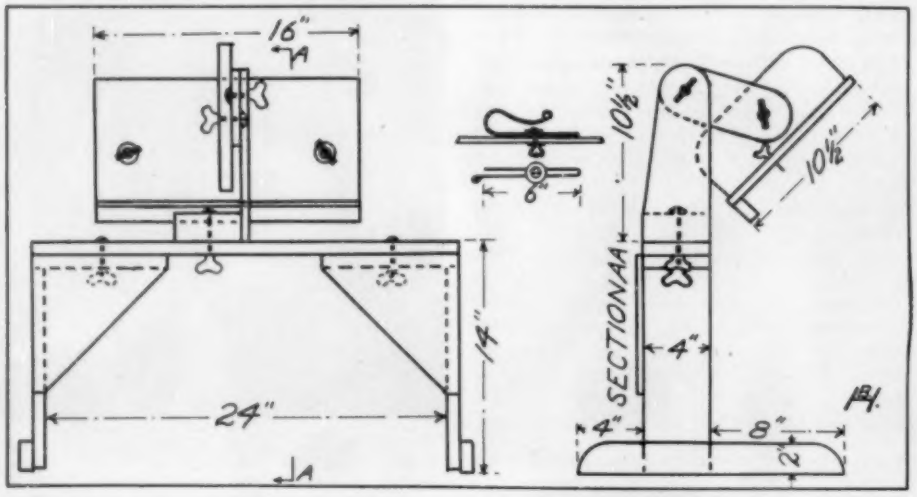

Figure 1. Back and lateral views of book holder and wire finger.

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(continued on page 318)

Editorial

What Shall It Be?

One of the facets of maturity in the physical therapy profession is research directed toward understanding the potentialities and effects of the physical agents we employ in the treatment of the patient. New approaches to old problems can be accepted with the attitude, "it can do no harm to try it and see if it works," or a systematic, controlled investigation can determine the merits, indications, and the contra-indications for use. If physical therapy is to develop as a body of scientifically sound procedures, we, in order to implement the prescription of the physician, have an obligation to the patient, the physician, and ourselves to learn more of the scientific method and to report the results of our work.

The Board of Directors of the Association recognized this need of the profession when they authorized the establishment of the Physical Therapy Fund, Inc. As the Fund grows and develops research projects will be supported. The Conference Program Committee has recognized the urgency of furthering the scientific method by allotting time for the reading of original papers and by providing an opportunity for those physical therapists interested in research and the reporting of their work to meet together.

All conscientious physical therapists are doing research daily. They are treating, teaching, observing, and recording the effects of therapy with every patient. They are "tuning in" on the personality of each patient to bring about the best results under the given circumstances. Simple measurements carefully taken and repeated at regular intervals, if accurately recorded with subjective information, may yield a wealth of valuable data. A stalemate too often occurs in interpreting the material in terms of physiological principles and in compiling it into an organized, clear, concise manuscript.

During the 1955 Conference in St. Louis, a program on "Developing a Paper for Publication Using Illustrative Data" was presented and the Illinois Chapter prepared an exhibit to supplement this theme, "Do's and Don'ts of Medical Illustrations." The response of the group attending was gratifying, but discussion revealed that insecurity in attempting to collect and present material, difficulty of finding a disinterested person who could constructively criticize the written re-

Editorial

port, and the question of whether the study would be of interest to others thwarted many of the group.

In 1956 a survey was attempted to ascertain the needs and interests of physical therapists concerned with scientific research. In general the group expressed a desire to gather and exchange research ideas; to participate in the standardization of testing procedures; to learn how to plan and conduct a study, analyze the data, and prepare the manuscript.

The terms "research" and "scientific," while often misused, are terrifying to many. Actually their meaning is similar. By dictionary definition, "research" is an investigation directed to the discovery of some fact by careful study of a subject, a course of critical or scientific inquiry. In the broadest sense this may include clinical, historical, educational, or laboratory research. "Scientific," as an adjective, carries the connotation of an art, practice, operation or method based upon or regulated by science as opposed to mere traditional rules or empirical dexterity. One other term often associated with this group of interested persons is "academy." It has two quite different definitions; a place of training or a school, and a society of learned men united to advance literature, art, or science.

This last definition could be modified to read a society of not-so learned physical therapists willing to unite to advance the science and writing in their field through self-education. Eventually the group may attain the stature of scientific researchers.

It can be assumed that all members of the American Physical Therapy Association recognize and support the principle that universal professional stature is dependent upon fruitful research and literate reporting in addition to successful patient care. While it is quite natural that not every member will be an active contributor to the literature many more than are apparent could and would share this task if more guidance were available. This opportunity will be provided during the 34th Annual Conference in Detroit.

Medical Writing For Physical Therapists

Association members concerned with Research will meet Monday morning June 24 from 10 to 12 o'clock at the Statler Hotel in Detroit, Michigan when Jacques P. Gray, M.D., will discuss "Medical Writing."

As Director of Special Medical Services and Medical Consultant to Parke, Davis & Company, Detroit, Michigan, and as Visiting Lecturer on Medical Writing of the American Medical Writers' Association, Dr. Gray will present an opportunity for physical therapists to broaden their knowledge of medical writing. Dr. Gray's responsibilities include instruction in medical writing to medical students in the medical colleges and to interns and residents of the leading teaching hospitals in the United States and Canada.

Dr. Gray is a Johns Hopkins and Harvard graduate. He has served as Dean and Professor at the Medical College of Virginia and also at the University of Oklahoma School of Medicine.

All interested physical therapists are cordially invited to attend this lecture and discussion session.

Association News

Frances Helen Ryder of Manchester, New Hampshire, and formerly of Los Angeles, California, passed away recently. Mrs. Ryder became a member of the Association in 1928 and became a Life Member of the Association in 1954.

Stella Schlereth Shepherd of Cincinnati, Ohio, passed away December 27, 1956. Mrs. Shepherd, a graduate of the University of Cincinnati, completed training in nursing at Jewish Hospital School of Nursing, Cincinnati, in 1940. She received her physical therapy education at Northwestern University in 1941-1942. Mrs. Shepherd served at Brooke General Hospital and Fort Sam Houston, Texas, and after discharge from the Army, was employed at Women's and Children's Hospital, Albuquerque, New Mexico. For several years and until the time of her death, Mrs. Shepherd was a member of the staff of Good Samaritan Hospital in Cincinnati. She had been a member of the Association since 1942 and was a member of the Ohio Chapter.

Katharina Van Ness of Rochester, New York, passed away on Feb. 26, 1957. Miss Van Ness attended Sargent School for Physical Education and received the certificate in physical therapy at Harvard Medical School, Courses for Graduates, in 1943. Miss Van Ness was employed at the Cerebral Palsy Center and most recently was a staff physical therapist at the school for handicapped children in Rochester. She was a member of the New York Chapter and became a member of the Association in 1944.

James B. Mennell, M.D.

Dr. James Beaver Mennell, Honorary Member of the Association, died at his home in Liss, England, on March 2, 1957. Dr. Mennell was author of numerous publications including two volumes entitled *The Science and Art of Joint Manipulation*. In 1947-48 he was visiting Associate Professor of Physical Medicine at the University of Southern California. During this time he was a program participant at the 24th annual conference of the American Physical Therapy Association held in Asilomar, California, and was elected to honorary membership in the Association.

Dr. Mennell was a pioneer in his field, achieved worldwide recognition for his work, and while he was geographically remote from our members, his impression upon them will remain. Members who did not have the privilege of knowing Dr. Mennell will recall his letters of greeting sent to our annual conferences.

The following quotation from the preface of Dr. Mennell's second volume, *The Art and Science of Joint Manipulation* is typical of his attitude toward his profession and his patients. "If I have been able, through these pages, to bring relief to some whose lives have been rendered miserable by pain, I, and those who have worked with me, will be content."

Physical Therapy Legislation in Indiana

Indiana became the twenty-fifth state to enact legislation relating to the practice of physical therapy when the Governor signed a bill passed by the legislature early in March, 1957. The law provides for a State Examining Committee composed of three physical therapists to assist the Board of Medical Registration and Examination of Indiana in the administration of the law. The practice of physical therapy in Indiana is now limited to physical therapists who meet the qualifications as set forth in the law and are duly registered by the Board.

Election of Officers—1958

The Nominations Committee wishes to urge upon the total membership the need for early attention to possible candidates for the national elections to be held in 1958. Selection of a representative slate of officers is a serious responsibility and should receive the conscientious help of all members of the Association. The Nominations Committee will recommend a slate of officers from the candidates suggested by the membership, but the membership must first make its recommendations.

Elections in any year are important, for the life of the APTA rests on those elected for a vital term of office. More attention will need to be exercised this year in the suggestions for

candidates in view of the possibility of changes in the executive structure of the Association through Bylaw amendments, as recommended by the management survey, which have been discussed at length in all chapters. A larger slate of officers and a wider representation from the membership may result from the Bylaw changes if they occur, and a redefining of the duties of certain officers may influence the selection of the type of candidate who would best serve in each capacity. Your thoughtful consideration of possible candidates cannot begin too soon as each chapter will be asked in the fall of this year (1957) to offer its suggestions for nominees.

MARGARET L. MOORE, *Chairman*
Nominations Committee
THELMA PEDERSEN
BARBARA WHITE
MARGARET KNOTT
MAY E. McDONNELL

Marriages

Barbara C. Ayers, of West Allenhurst, N. J., now Mrs. Barbara A. Vliet, West Allenhurst.

Anne L. D'Onofrio, of New Haven, Conn., to Arnold Ryder, Hamden, Conn.

Alice C. Ellis, of Pittsburgh, Pa., to Frank A. Audina, San Antonio, Texas.

Claire Favrod-Coune, of Boston, Mass., now Mrs. Claire F. Bermane, Chateau D'oeux, Switzerland.

Barbara J. Harris, of Flint, Mich., now Mrs. Barbara H. Monie, Oakland, Calif.

Jean Kuhns, of Pittsburgh, Pa., now Mrs. Jean K. Murray, Murrysville, Pa.

Jessie Lyons, of Dallas, Texas, now Mrs. Jessie L. Brown, Knoxville, Tenn.

Julia M. Nickum, of Butler, Pa., now Mrs. Julia N. Knight, Allison Park, Pa.

Esther Randall, of Nashville, Tenn., to Richard A. Bacas, Arlington, Va.

Leona Schifani, of Houston, Texas, to R. J. Schroeder, LaMarque, Texas.

Marjorie T. Whittier, of Cedar Rapids, Iowa, now Mrs. Marjorie W. Haikey, Genoa City, Wis.

Chapter News

Connecticut

At the February meeting of the Connecticut Chapter, Sidney Shindell, M.D., stressed, among other points of interest to physical therapists, the importance of accurate and objective record keeping. In reference to progress notes, when doubt exists, the physician-in-charge should express the degree of progress or lack of it.

Louisiana — Northern District

The Northern Louisiana District has become a charter member of Science Education Council, a tri-parish organization which has as its objective the promotion of interest in science careers. The District has also distributed the Louisiana Directory to all licensed physicians in the District.

Minnesota

The Minnesota Chapter, through the Greater University Fund at the University of Minnesota, has established a fund to be known as "Minnesota Chapter, American Physical Therapy Association Scholarship." The initial gift is $300.00 which will support the scholarship for the year 1956-1957. The Bureau of Student Loans and Scholarships will work cooperatively with the designated officers of the Minnesota Chapter and the staff of the Department of Physical Therapy, University of Minnesota, in carrying out responsibilities respective to the newly established fund.

North Carolina

"Better Utilization of Existing Resources for Improved Care of the Discharged Patient" was the topic presented by the North Carolina Chapter at the spring meeting. Participants represented physical therapy service from volunteer agencies, general hospitals, public health programs, and self-employed physical therapists. Representatives from the fields of social service, public health nursing, and vocational rehabilitation also participated.

The Chapter newsletter includes a "short form" of the annual recruitment report in order that each member's efforts toward recruitment may be included in the Chapter's annual report.

Pennsylvania—Eastern District

A report of the Public Relations Committee states that 50 letters were sent to allied professional groups offering the film "Within Your Hands" and a speaker who would discuss physical therapy. Within the first week three replies had been received. The Committee plans to send similar letters to lay groups including women's clubs.

Texas

The Texas Chapter is creating a library of 35 mm colored slides to tell the story of physical

Peg Irvine Receiving Memento. (left to right) Hazel Smith (President Washington State Chapter), Emily Griffin, Karen Rynning, Marguerite Irvine, Elsie Child (four National Charter members).

therapy in Texas. Treatment centers throughout the state have been requested to contribute representative slides.

Vermont

The Vice-president of the Vermont Chapter has been assigned the duty of contacting prospective physical therapy students in the area. The letter includes an invitation for visits to conveniently located physical therapy departments. The March newsletter closes with two reminders:

1. Don't forget to send your contributions to help support the Physical Therapy Fund, Inc.
2. Have you had your polio shots? Remember, it's your duty as well as your privilege. Let's protect and prevent!

Washington Chapter Honors Charter Members

The Washington Chapter on January 26 honored four Charter members at a program, "APTA in Retrospect—a Narrative." The "Honor Guests" were Elsie Childs, Emily Griffin, Marguerite Irvine, and Karen Rynning. The following account is taken from the February issue of the Chapter newsletter and gives the impressions of "Honor Guest," Emily Griffin.

"We were met by our charming hostesses, and —after a corsage of a rose surrounded by violets was securely fastened to our 'best bib and tucker' —we were ushered into a room where cocktails were being served to the music of gay laughter and conversation. Members had braved the elements to come from all over the state of Washington, and Ruth Babb was present from as far as Portland, Ore. Several of our doctor friends and their wives honored us by joining in the celebration.

"When the doors were opened we were ushered into the dining room and the "G of H" were seated with other honored guests at a long raised table facing our friends who were scattered around the room at small tables.

"After a 'scrumptious' dinner the 'Narrative' began. First we were given a brief history of the origin of 'The American Women's Physical-Therapeutic Association' and that of the Washington State Chapter. Then, amid much laughter, a wounded World War I patient was given a treatment for a foot injury in front of a pup tent out in the Field. Oh the uniforms! Times certainly have changed many things. There was a tremendous amount of research done from old photos, news articles, and attics. Soon four girls arrived as 'shades' of the four Guests of Honor. Of course the present Army and Navy physical therapists in the audience, attired in

their beautiful modern uniforms, were jealous of our styles! All along, the voice of the Narrator kept us posted as to the flight of time.

"After this very amusing skit our four 'shades' escorted us from the platform to chairs on the floor where the President of the Chapter read our 'Life History,' skillfully obtained by subtle questions, from a beautiful photograph album which she presented to us—a most delightful memento of this occasion. We were then escorted back to our table and another surprise appeared. The 'Folklanders' folk dance group, five couples of P. T.'s and non-P. T.'s danced Danish, Italian, Swedish, and Austrian folk dances in full costume.

"Came the final Good Nights and I can't imagine a more delightful evening of typical physical therapy charm and fun! I shall always keep my album in a prominent place to show my friends, and added to my collection of old army pictures will be the ones taken throughout the evening.

"There is something rather wonderful which has been handed down from one group of physical therapists to the next and it is always present in the friendly give and take among the physical therapists along with the more serious side of trying to put the patients back on their physical, mental, and spiritual feet.

"Thank you Washington State Chapter for a Wonderful Evening!"

Professional Service Consultant Appointed

Lillian E. Chabala has been appointed to the position of Consultant, Department of Professional Services, and will begin her duties at the time of the annual conference in Detroit. In her new position Miss Chabala will assist Lucy Blair with poliomyelitis assignments, advisory services to physical therapists and administrators, and will make chapter contacts during field trips.

Miss Chabala comes to the National Office from the University of Southern California where she held the position of Assistant Professor, Department of Physical Therapy. Her responsibilities which included teaching, supervision of students, organization and administration of a physical therapy department, and treatment of patients provide an excellent background for her new position. Previous physical therapy positions include appointments at Los Angeles County Hospital; Huntington Hospital, Pasadena; and Orthopaedic Hospital, Los Angeles.

After attending Savage School for Physical Education, Miss Chabala entered Teachers College, Columbia University, and received the bachelor of science degree in 1943. She was certified in physical therapy at Columbia in 1945 and completed work for the master of arts degree at Columbia in 1952.

LILLIAN E. CHABALA

A member of the Association since 1947, Miss Chabala has served the Southern California Chapter as Recruitment Chairman, 1949-50; Corresponding Secretary, 1952-54; Co-Chairman, Committee on Legislation, 1951-1953; and is presently serving as chairman of the Committee on Legislation. She also served as Chairman of the Advisory Committee on Registration of Physical Therapists in California, 1954-1955; and is presently Chief Commissioner, California State Registration Examinations for Physical Therapists.

Fitzsimons Physical Therapists Have Mass Casualty Training

Fitzsimons Army Hospital of Denver is the latest Army hospital to conduct special training in selected nursing procedures for allied medical officers as a preparatory measure for helping the professional nurse care for mass casualties in a nuclear attack.

Major Ann M. Witczak, Army Nurse Corps educational coordinator for the hospital, and Major Mary L. Ben Dure, AMSC, Chief of the

Physical Therapy Section, planned the six months' course which concluded in March 1957. The first class to have this Nursing Assistant Course was composed of the 13 physical therapists stationed at Fitzsimons Army Hospital, well known for its care and treatment of tuberculosis patients. Major Witczak is the course instructor.

The curriculum of the course ranges from discussions on patterns of panic in a disaster area to on-the-scene care of an immediate maternity case. It is similar to the Army's over-all mass casualty training program. Major Witczak has tried to inject as much realism as possible into all phases of the instruction.

Col. Harriet S. Lee, Chief of the Army Medical Specialist Corps, pointed out in an address made to the 1955 meeting of the Association of Military Surgeons of the United States that predisaster training was most desirable for the dietitians, physical therapists, and occupational therapists of the Corps and should be realistic enough to enable these officers to make their maximum potential contribution in the event of an emergency.

"Physical therapists can play a vital role in the treatment of burns," she said. "It is envisaged by those responsible for over-all planning that physical therapists may be assigned major supervisory duties on burned patient wards. It is imperative that physical therapists have continuous predisaster orientation to mass therapy technics related to current concepts in the treatment of burns.

"In the later stages of the disaster situation, these therapists will make their greatest contribution in the pursuit of their normal professional duties."

New Student Members

Boston University

Donna Barufaldi
Winifred Collins
Barbara DeLaney
Shirley Eaton
Leya Ephross
Sally Gilchrest
Elizabeth Bachner
James Bertschy
Sheila Brodsky
Samuel Cronis
Harold Dame
Rosalie Dansker
Sheila Dougherty
Ann Drisko
Jean Hansen
Judith Hey
Naomi Hochberg
Beverly Israel
Charlotte Nugent
Joan Kent
Maryann Powers
Audrey Slade
Harriet Strzelewicz
Mary E. Thomas
Jean Woolley
Janet Paterson
Dorothy Pinder
Sybil Powden
Audrey Randolph
Sister Mary Therese
Ilene Somkin
Beatrice Sudrabin
Ann Marie Sullivan
Janet Tevekelian
Carol Wendell
Joyce Whitworth
Dorothy Wolfe
Janet Young
Marilyn Young

Charity Hospital

James Burns

D. T. Watson School of Physiatrics

Janice M. Arneman
Thomas G. Blosser
Joel H. Broida
Walter A. Case
Chester L. Cypher
Julia A. Dazen
Walter Detweiler
James L. Dillon, Jr.
Daniel A. Dobbins, Jr.
Philip B. Donley
Judith Dorman
Audrey M. Ely
Mary M. Gerber
Leslie M. Gray, Jr.
Janet A. Grenfell
Helen M. Hillman
Jean T. Hogue
Elizabeth E. Ives
Barbara A. James
Thomas A. Kellerman
Marjorie R. Kline
Steve L. Kolumban
Barbara J. Lambie
Ronald E. LaNeve
Isaac A. Magett
Palmyra M. Mascaro
William E. Massaro
Mary Jane Mehrten
Arlene A. Mering
Margaret L. Moore
Rudolph F. Peters
John N. Pompei
Juliana Quinn
William L. Theisen
Boyd E. Thomas
Irene Tsapis

Duke University

James L. Austin
Ruth E. Barnhardt
Nancy J. Lofgren

Mayo Clinic

Margaretta M. Arcaro
Carol Bardsley
Barbara Berg
Mary M. Bigstaff
Barbara J. Bradford
Lee E. Caseldine
Sara E. Chamless
Francisca De Santos
Mary J. Diehl
Florence E. Douglass
Myrna M. East
Geraldine J. Estrada
Stanley I. Freburg
Judith L. Haltom
Hazel M. James
Sally A. McCandless
Joan F. Myatt
Patricia A. Niesen
Jane R. Orr
Betty A. Phillips
Louis G. Pridgeon
Verle L. Ritter
Jo Ann Robertson
Kathleen A. Spaulding
Dorothy L. Stroy
Margaret A. Thinnes
Ann L. Tisher
Sandra S. Tucker
Lucia D. Werner
Donna J. Westerlund

New York University

Richard DeCovis
Edward C. Hooker
Gertrude V. Kilbane
Jack W. Lloyd
George Jessup, Jr.
Kenneth B. North
James G. Owens
Joseph Rottenstein
Hamilton Stephens

St. Louis University

Jacqueline Haug
Sharon Mulcahy
Mary Palmer
Sister Mary Martin

Simmons College

Renee L. Chasalow
Julia A. Dillon
Mary W. Dreier
Nancy J. Even
Doreen Gardner
Sandra M. Goodman
Muriel L. Holub
Victoria A. Reichert
Alice M. Shea

Stanford University

Heather Alexander
Helen P. Grant

(*continued on page 326*)

Letter to the Editor

DEAR EDITOR:

In September 1955 the Society and Home for Cripples in Denmark began to give lessons in horseback riding as a part of the treatment program for poliomyelitis children.

We borrowed a horse from Norway, an English pony, especially trained for that purpose, since he is well behaved without being lazy. Unfortunately the horse is so small, that he cannot be used for adults.

The lessons in horseback riding are given in a ridinghouse in the environs of Copenhagen about 5 km. from the Orthopedic Hospital. The horse is stabled at the same place. It has been very important to have available a ridinghouse, since the Danish climate is such, that we can give riding instructions to these children only for a short time outdoors. The lessons are given by Mrs. Litten Lerche, who is very well qualified to give children instructions in riding. She was recommended to us by the very famous Olympic rider, Lis Hartel, who in spite of her own handicap (poliomyelitis) won the silver plate in school riding during the Olympic Games in Finland in 1952 and in Sweden in 1956. When one sees Lis Hartel's wonderful riding, one can hardly believe that it is difficult for her to walk and it is impossible for her to mount her horse alone.

In the beginning a physiotherapist was present every time the children rode, but now she attends only twice a week to observe the effects of the riding on the children. There have been 10 children, 7 boys and 3 girls in the ages from 8 to 14 years, who have received riding instructions during this time. All the children are riding without braces, corsets, or other supports.

Most of these children have reduced function in their abdominal and back muscles; some of them have one or both legs paralyzed. One child has paralyzed arms.

Before the riding instructions were begun all the children were examined by the doctor. After six months they were reexamined and the parents were interviewed for their opinions and observations as to possible benefits. The results are as follows—in those cases where the children had back and abdominal weakness there has been improvement as demonstrated by better balance and posture. In some cases the children have improved their gaits.

Some of the children have scolioses and when they were examined in August we saw that in some of the children this deformity had increased. We do not think that riding is the reason for this; however, since it is important that a child with scoliosis have as much rest as possible, we stopped the riding for these children at once. We feel that frequent reexamination of these children is extremely important.

Riding stimulates muscle function.

All the children enjoy the riding and the psychological benefit has been very important. The children have more confidence in themselves, they have gained status and in this accomplishment are a step ahead of other children.

After Christmas two young men about 30 years old began to ride. Both of them are severely paralyzed in the back, abdomen, and legs and can walk only by means of Canadian crutches and braces. Their time spent in riding has been too short to show real results, but both of them have told us that they feel that the riding is much better treatment for total muscle function than exercises given to them by the physiotherapist.

The riding for children with poliomyelitis has been a great success. We have found a way to give children exercises which are at the same time beneficial and enjoyable. It is a sport which can be performed by both children and adults. Even if they cannot walk they can have the opportunity to forget their handicap for a short time and to feel that they are normal people. It is my hope that more poliomyelitis patients will find many happy and healthy hours on horseback.

The picture shows one of the children riding the English pony.

ULLA HARPOTH
Chief Physiotherapist
Orthopedic Hospital
Copenhagen, Denmark

First Goal of Fund Achieved

The initial $5,000.00 necessary to the establishment of the tax-free Physical Therapy Fund, Inc., has been made possible by donations from 377 contributors. Contributions ranged from $1.00 to $1,000.00 indicating that members recognize the inception of the Fund as a significant factor in the development of the profession. As of April 17 the contributions totalled $5,889.75 from 431 donors. Total pledges for future payments during the first year amount to $417.00.

While the deadline for charter donations was March 15 and the initial goal was achieved by that date, the fund must continue to grow and must be perpetuated. This growth will be assured if all members contribute in the future as the small percentage of charter donors responded to the original announcement of the fund. At the end of one year when a tax ruling has been made it is anticipated that the Fund will not be solely dependent on APTA members. Substantial gifts must be solicited and received from the many friends of physical therapy who recognize and appreciate its value. We must acquaint these people with the Fund and motivate cash donations, and bequests, naming the Fund as a beneficiary.

The list of Charter Donors, those whose checks carried a date not later than March 15, follows:

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Adams, Emily
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Robbins, Mildred M.
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Wood, Mary K.
Wortman, Olive V.
Wulf, Lena
Yale, Harriet
Young, Dorothy
Ziegler, Wilma Z.
Zimmerman, James P.
Zimmerman, Lyndall D.

AHA-APTA Institute for Physical Therapists

An Institute for Physical Therapists conducted by the American Hospital Association in cooperation with the American Physical Therapy Association will be held at the Somerset Hotel in Boston, Massachusetts, on November 4-8, 1957.

This is the fourth year that the American Hospital Association has planned a program for physical therapists which will include sessions on organization, management, and interrelationships.

Additional information regarding the program and applications will appear in future issues of the *Review*. Anticipate your fall activities now. Enrollment will be limited and an early registration is recommended.

Arthritis and Rheumatism Meeting

Physical therapists attending the 34th Annual Conference in Detroit will have an opportunity to hear about recent developments in the field of arthritis and the rheumatic diseases at a special session to be conducted by Dr. R. W. Lamont-Havers, Associate Medical Director of the Arthritis and Rheumatism Foundation, New York.

Dr. Lamont-Havers, one of the nation's foremost authorities on the rheumatic diseases, will speak at a meeting scheduled for the morning of June 24. Physical therapists associated with ARF chapters as well as all other members of the American Physical Therapy Association interested in the arthritis problem are invited to attend.

CAUTION!

Paint Brushes and Anthrax

Physical therapists who are using "brushing" technics in neuromuscular reeducation should be cautioned to use only brushes which have been sterilized or which have synthetic bristles. The need for caution was pointed out by an Association member, Charles Pujals, Jr.

According to Cecil and Loeb's *Textbook of Medicine*, 1951 edition, anthrax is an acute infectious disease which in the cutaneous form has been caused by contact with horsehair shaving brushes, with anthrax meningitis as a frequent complication. "The infection chain, animal-man, is, as a rule, broken. In 1948, however, a man-to-man transmission was proved (Reilly and Beeson). Moreover, healthy persons may carry spores in their clothing."

Disinfection of "anthrax-infected or suspected areas" may be accomplished by "boiling for three hours or by steam under pressure."

Index to Current Literature

(*continued from page 307*)

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RESPIRATION

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Narcotic Induced Controllable Apnea. Francis F. Foldes, Am. J. M. Sc., 233: 1-3, January 1957

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The Use of Tracheotomy in the Burned Patient. T. G. Nelson, R. D. Pillsbury and W. F. Bowers, Surg., Gynec. & Obst., 104: 163-166, February 1957

MISCELLANEOUS

Flexibility Characteristics of Four Specialized Skill Groups of College Athletes. Jack R. Leighton, Arch. Phys. Med. & Rehab., 38: 24-28, January 1957

Overwork. G. Clinton Knowlton and Robert L. Bennett, Arch. Phys. Med. & Rehab., 38: 18-20, January 1957

Science and Public Understanding. D. Wolfe, Science, 125: 179-182, February 1957

Courtesy of Detroit Convention and Tourist Bureau

Cranbook, just north of Detroit in rolling Bloomfield Hills, is a world famous combination of beautifully landscaped park and outstanding museums, schools, and church. The peristyle breezeway in this photo, designed by the late Eliel Saarinen, links the library of the Cranbrook Academy of Art and the noted Cranbrook Museum of Art. The bronze sculpture of Europa and the Bull in the foreground is one of many pieces by the famed Carl Milles which dot the grounds.

Due North of Canada

The City of Detroit, which is due north of Canada, has served three flags—French, British, and American. Now, it is about to serve a fourth —the triangle of blue, white and gold heralding the physical therapists!

Detroit is a city on wheels as well as being one laid out as a semi-wheel. Along with its many suburban neighbors, it offers a wealth of things to see, to hear, to taste, to smell, to touch—museums, music, food, flowers, sports. Bell Isle can offer one a full day in any sense of the word. The Conservatory is a delightful place to lose one's self in the quiet of flowers and shrubs. The Children's Zoo, with all its animal children, can take you back to days of yore, and so on and on. The Detroit Zoo might claim your interest, also. It is north along Detroit's main wheel spoke—Woodward Avenue.

Perhaps you are interested in textile design—Cranbrook is a world leader in this field. From the design of textiles to the finished products—visit Northland Center with its 103 stores, intriguing sculpture, and everchanging flower beds. Spend a day of shopping—window and otherwise.

Inviting spokes of the wheel might beckon you on to higher learning centers. The University of Michigan in Ann Arbor, Michigan State University in East Lansing, and Wayne State University in Detroit are but three such centers within easy access of the Hotel Statler.

For a "busman's holiday" there are unlimited places to visit. Mary Free Bed Hospital in Grand Rapids would be a must on an extended jaunt upstate. Within a ten or fifteen minutes drive of the Hotel Statler there are eight large hospitals and several special centers. A fabulous Rehabilitation Center is planned and one might be able to be a sidewalk supervisor.

What more of a state and city can one ask? Come to the 1957 Convention. See Michigan. There's a center of interest for each individual taste.

19 MICHIGAN 57

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WATER WONDERLAND

CONFERENCE 1957

DETROIT, MICHIGAN
JUNE 23-28 · HOTEL STATLER

Business Meetings and Program Schedule

June 20, 21 and 22 — **Board of Directors Meeting**

Sunday, June 23

9:00 A.M. — 5:00 P.M. — Section on Education
Self-Employed Section
Members in Public Health Work

5:00 P.M. — 8:00 P.M. — **Reception**—Michigan Chapter, Host

Monday, June 24

9:00 A.M. — 12:00 Noon — **Delegates' Registration**

9:00 A.M. — 5:00 P.M. — **General Registration**

10:00 A.M. — 12:00 Noon — Group Meetings—Veterans Administration, Crippled Children's Societies, State Examining Committees, Research Group, Arthritis and Rheumatism

2:00 P.M. — 5:00 P.M. — Opening Session—Greetings, President's Address, Keynote Speech: LAYING THE CORNERSTONE FOR LIVING THROUGH GROWING, LEARNING, DOING—Louis A. Schwartz, M.D., Assistant Professor of Psychiatry, Wayne University Medical School

7:30 P.M. — 10:00 P.M. — Discussion of Proposed Bylaw and Code of Ethics Amendments

Tuesday, June 25

9:00 A.M. — 12:00 Noon — **House of Delegates**

2:00 P.M. — 5:00 P.M. — THE CHILD WITH AN ACQUIRED DISABILITY

The Growth and Development of a Normal Child, Louise Bates Ames, Ph.D., Director of Research, Gesell Institute of Child Development, New Haven, Connecticut

The Medical and Psychological Aspects of Childhood Disease and Acquired Disability, Samuel S. Bernstein, M.D., Associate Professor Pediatrics, Wayne University

Attitudinal and Acquired Deformities of the Lower Extremities in Small Children, Francis P. Walsh, M.D., Surgical Staff, Harper Hospital, Detroit

Physical Therapy for the Junior Citizen, Carolyn Bowen, Physical Therapy Consultant, Washington State Department of Health

7:30 P.M. — 10:00 P.M. — **Film Theater**

Wednesday, June 26

9:00 A.M. — 11:30 A.M. — **House of Delegates**

2:00 P.M. — 5:00 P.M. — THE CONGENITALLY DISABLED ADOLESCENT APPROACHING ADULTHOOD

The Normal Adolescent—His Growth and Development, Louise Bates Ames, Ph.D., Director of Research, Gesell Institute of Child Development

A Medical Caseworker Looks at the Physically Handicapped Adolescent, M. Genevieve Blakeley, Executive Director, Detroit Orthopaedic Clinic

Certain Anatomical and Physiological Relations Important for Interpreting Cortical Lesions, Elizabeth C. Crosby, D.Sc., Professor of Anatomy, University of Michigan

What Public Schools Offer to the Handicapped, Anna M. Engel, Consultant, Detroit Association for Retarded Children, Inc.

The Function of the Physical Therapist in Program Planning for the Adolescent Patient, Edward N. Norris, Chief Physical Therapist and Medical Coordinator, Lansing Public Schools, Lansing, Michigan

Wednesday, June 26

6:00 P.M. — 7:00 P.M.	**Reception for Board of Directors**
7:30 P.M.	**Annual Banquet**

Thursday, June 27

9:00 A.M. — 12:00 Noon	A SERIOUS ACCIDENT DURING THE CAREER YEARS The Adult as a Contributing Member of Society, Jerome Pollack, Program Consultant, Social Security Department, United Automobile Workers Functional Anatomy of the Trunk, Meryl Miles, Associate Professor, Department of Anatomy, University of Wisconsin Management of Back Injuries, Henry S. Wieder, Jr., M.D., Assistant Professor of Orthopaedic Surgery, Graduate School of Medicine, University of Pennsylvania and Eugene Michels, Staff Physical Therapist, Graduate Hospital, University of Pennsylvania Vocational Rehabilitation from the Viewpoint of the Employer and the Employee, John J. Lee, Ph.D., Chairman, Department of Special Education and Vocational Rehabilitation
2:00 P.M. — 3:00 P.M.	Amputations in Children, James A. MacDonnell, M.D., Michigan Crippled Children Commission
3:30 P.M. — 5:00 P.M.	Original Papers The Impact of the National Foundation for Infantile Paralysis' Scholarship-Fellowship Program on the Profession of Physical Therapy, Helen J. Hislop, New York, New York The Role of the Physical Therapist in Home Accident Prevention, Richard Zarbock, Dover, Delware Physical Therapy for Whiplash Injuries to the Neck, Hyman Jampol, Los Angeles, California Development of a New Service in a Muscular Dystrophy Clinic, Julius W. Horvath, St. Louis, Missouri Early Postoperative Care—The Menisectomy, Royce P. Noland, San Francisco, California
7:30 P.M. — 10:00 P.M.	**Film Theater**

Friday, June 28

9:00 A.M. — 12:00 Noon	LIVING FOR THE MATURE YEARS The Physiological and Pathological Foundations of Restorative Medicine in the Aging, Michael M. Dasco, M.D., Associate Professor of Clinical Physical Medicine and Rehabilitation, New York University College of Medicine Physical Therapy in Geriatrics, Geneva Johnson, Chief Physical Therapist, Eugene Talmadge Memorial Hospital, University of Georgia Financial Planning for the Later Years, Helen Randall, Director, Occupational Planning Department, Welfare Federation of Cleveland What Do the Mature Years Offer? Morris Adler, Rabbi, Congregation Shaarey Zedek, Detroit
2:00 P.M. — 5:00 P.M.	**House of Delegates** **Visits to Local Physical Therapy Departments**

A recess will be scheduled each morning and afternoon to visit exhibits.

Conference Facts

Hotel

Not only is the Hotel Statler convenient to all travel terminals, it is also located in the heart of business, theater, and shopping districts. Churches of all denominations are within walking distance. All meeting rooms and many bedrooms are air-conditioned.

Rates

Single rooms and bath begin at $7.00. Rooms with double bed and bath for two and twin-bedded rooms and bath start at $11.50. Suites for two begin at $26.00. For each additional person, more than two, in double or twin-bedrooms, the extra charge is $3.00 a day. Lower rates apply to shower only; tub and shower are higher.

Hotel Reservations

For your convenience in making reservations directly with the hotel, reservation cards will be included in the dues notices. Those persons planning to room together should send in only

one reservation, listing names of all roommates. If a room at the rate requested is unavailable, one at the nearest available rate will be reserved. When single rooms are filled the hotel will assign roommates.

Registration

Active and Inactive Members	$5.00
Student Members	1.00
Other Physical Therapy Students	2.00
Members of Physical Therapy Organizations Affiliated with the World Confederation for Physical Therapy	5.00

Advance registration is encouraged. If you do not register in advance you *must* present your membership card when you register at the Conference. Look for the advance registration card in your dues notice. Advance registration cannot be accepted after June 1, 1957.

Physical therapists who have graduated from approved schools but are not members of the Association may attend the general sessions on presentation of credentials and payment of a registration fee of $15.00.

Exhibits

Technical exhibitors should make application to Gordon M. Marshall, Exhibits Manager, 30 West Washington Street, Chicago 2.
Scientific exhibitors should apply to the American Physical Therapy Association, 1790 Broadway, New York 19.

Film Theater

Members or organizations desiring to show movies, slides, or filmstrips at the Annual Conference may apply for inclusion in the program. Visual aids of special interest are related to subject areas of the scientific program: growth and development, special education, vocational rehabilitation, psychological adjustment to handicaps, orthopedics, neurophysiology, functional anatomy of the trunk or back, and geriatrics.

Applications should be sent to the American Physical Therapy Association by May 1, 1957, and should contain the following information:

Title of film, slides, or filmstrip;

Producer and/or distributor's name and address;

Technical data: black and white or color; sound or silent; film or slide size; running time of film, or number of slides and time needed to show them; year produced;

Name or organization sponsoring participation in film theater and of person who will be responsible for material.

The Program Committee will select for the Film Theater those films and slides which in its judgment will be of greatest interest to the audience, which best relate to subject matter, and which will fit into the time allotted.

Professional Visits

The Michigan Chapter has arranged a schedule of professional visits to observe activities in general hospitals, rehabilitation centers, special hospitals and clinics, vocational training and testing centers, and brace shops. More complete information will be available after you arrive in Detroit. The following centers of interest to members will welcome visitors:

General Hospitals

Mt. Sinai Hospital
Detroit Memorial
Henry Ford Hospital
Harper Hospital
Grace Hospital
William Beaumont Hospital
Providence Hospital
U. S. Public Health Hospital
Wayne County General Hospital
Veterans Hospital

Special Hospitals and Clinics

Childrens Hospital
Muscular Dystrophy Clinic
Multiple Sclerosis Clinic
Detroit Cerebral Palsy Center
Sister Kenny Polio Hospital
National Society for Crippled Children

Rehabilitation Centers

Rehabilitation Institute of Metropolitan Detroit
McGregar Center
Jewish Home for Aged
Detroit Institute of Physical Medicine and Rehabilitation
Great Lakes Steel Corp.

Vocational Testing and Training

Detroit League for Handicapped
Jewish Vocational Training Center
Goodwill Industries

Brace Shops

Wright and Filippis
Rowleys
Bocks
Coons
Brenner and Keffer
Ritter
Becker
Michigan Artificial Limb
Martin and Halsted
Veterans Limb

Section on Education

PROGRAM

The Section on Education is pleased to announce that Capt. John A. Ey, Jr., U. S. Army Medical Service, Washington, D. C., will present the program for the general meeting of the Section during the Annual Convention, June 23, 1957, in Detroit. Captain Ey was Director of Training and Chief of Instructor Guidance for the Army Medical Service School both in the United States and in Europe before being assigned to his present job with the Historical Unit of the Army Medical Service.

Captain Ey has chosen for his subject "Technics, Methods, and Psychology of Instructing Including Visual Aid Demonstration." He plans to present, by means of lecture-demonstration, the experience of Army Medical Service with respect

to advantages and limitations of instructional aids, technics of instruction found to be desirable and acceptable, a review of the pitfalls to be avoided by instructors in presenting their material, and the part some common instructional aids play in teaching and in fostering the better performance of the instructor.

The Program Committee of the Section feels that Captain Ey's presentation, as outlined, will be of interest and of practical value to physical therapists in each of the three major job areas represented in the membership. Knowledge of methods of instructing and the use of visual aids are basic tools for the clinical instructor, the teacher in the physical therapy school, and for the therapist responsible for, or assisting in, the extension of physical therapy and rehabilitation to the public or other professions. Captain Ey's discussion should provide an excellent start in the search for the "Common Ground" between all Section members.

MEMBERSHIP

Membership in the Section on Education is open to any Association member who is (1) an educational administrator, (2) an instructor, (3) short course instructor, (4) in-service program instructor, (5) clinical teacher, or (6) a member who is associated with an educational program.

In order to create a "live" and constructive Section, the Membership Committee is anxious for everyone who is eligible to receive an application. Association members who have not yet received an application for Section Membership and who are eligible, are asked to send in the following information as soon as possible:

I wish to receive an application for membership in the Section on Education of the American Physical Therapy Association—

Name _____

Business Address _____

Chapter _____

Mail to:

Miss Corrine Way
U. S. Public Health Hospital
Lake Street and 15th Avenue
San Francisco, California

Since admission to the meeting of the Section will be by Section membership card only, it is imperative that prompt attention be given all applications. To assist those who have not become members prior to the June 23rd meeting Section Officers will be in Parlor B from 7:00 to 9:00 P.M. Saturday, June 22, to accept applications and breakfast reservations.

Conference Speakers

LOUISE BATES AMES, PH.D.

Louise Bates Ames, Ph.D., Director of Research, Gesell Institute of Child Development, New Haven, Connecticut, will present "Growth and Development of a Normal Child" and "The Normal Adolescent—His Growth and Development" at the Detroit Conference. Dr. Ames graduated from and received the master of arts degree from the University of Maine; and her doctorate from Yale University in 1936. Dr. Ames has served as Research Assistant with Dr. Arnold Gesell; Instructor in Child Development, Yale University Medical School; and Curator of Yale Films of Child Development. She is a member of the American Psychological Association, Society of Research in Child Development, Society for Projective Techniques and Rorschach Institute Inc., and is a Certified Psychologist in the State of Connecticut. Dr. Ames contributed to the publication of several books including *The First Five Years of Life, The Child from Five to Ten, Youth—the Years from Ten to Sixteen, Rorschach Responses in Old Age,* and *Adolescent Rorschach Responses* (in press).

LOUIS ADRIAN SCHWARTZ, M.D.

Louis Adrian Schwartz, M.D., will present the keynote address, "Laying the Corner Stone for Living Through Growing, Learning, and Doing," at the opening session of the 1957 Conference. Dr. Schwartz is Assistant Professor of Psychiatry, Wayne State University Medical School; and Lecturer in Psychosomatic Medicine, University of Michigan Medical School. He is senior physician at the Harper Hospital and Sinai Hospital in Detroit and is senior consultant, Lafayette Clinic, Detroit. Dr. Schwartz received his medical education at the University of Michigan Medical School and studied neurology in Vienna and London. He is a Diplomate of the American Board of Neurology and Psychiatry, and a Fellow of the American Psychiatric Association. Dr. Schwartz is the author of numerous publications on the subjects of *Convalescent Care for the Pediatric Patient, An Interpretation of the Emotional Needs of the Adolescent,* and *Clinical Implications of Psychosomatic Medicine.*

M. Genevieve Blakeley, Executive Director, Detroit Orthopaedic Clinic, is a graduate of Marygrove College and received the master's degree in social work from the University of Michigan in 1946. Miss Blakeley has been a teacher, medical caseworker, casework supervisor, and has specialized in psychiatric casework training and medical casework practice. She is a member of the National Association of Social Workers. At the annual conference in Detroit Miss Blakeley will present "A Medical Caseworker Looks at the Physically Handicapped Adolescent."

JOHN J. LEE, PH.D.

John J. Lee, Ph.D., Chairman, Department of Special Education and Vocational Education, College of Education, Wayne State University, is a graduate of the University of Michigan. He received the master of arts degree from the University of Michigan and completed the work for his doctorate at Ohio State University. After a number of years of experience in the elementary and secondary schools in Michigan, Dr. Lee was appointed State Supervisor, Divisions of Special Education and Civilian Vocational Rehabilitation, a position which he held from 1928-1936. Dr. Lee has, among other appointments, served as Dean of the Graduate School, Wayne University. At present Dr. Lee is Consultant to the United States Office of Education on education of the mentally retarded and is Educational Consultant to the National Society for Crippled Children and Adults. "Vocational Rehabilitation from the Viewpoint of the Employer and the Employee" will be Dr. Lee's topic on the Conference program.

HENRY S. WIEDER, JR., M.D.

Henry S. Wieder, Jr., M.D., is Assistant Professor of Orthopaedic Surgery, Graduate School of Medicine, University of Pennsylvania and Associate Orthopaedist and Orthopaedic Director, Outpatient Department, Graduate Hospital. Dr. Wieder is a graduate of the University of Pennsylvania and of the Medical School of the University of Pennsylvania, having completed his medical studies in 1939. From 1942 to 1946 Dr. Wieder served as an orthopaedist in the Army of the United States. His previous positions include those of Consultant to Veterans Administration Regional Office, 1947-1948; Consultant Orthopaedic Surgeon to Franklin Sugar Refinery, 1948-1951; and Instructor in Orthopaedics (Mt. Sinai Hospital), Hahnemann Medical College, 1947-1951. Dr. Weider is a member of the American Academy of Orthopaedic Surgeons and is the author of several articles including "Management of Low Back Pain" published in *Philadelphia Medicine*, September, 1951. Dr. Wieder will present "Management of Back Injuries" at the Detroit Conference.

Samuel S. Bernstein, M.D., is Associate Professor of Pediatrics, Wayne State University. He graduated from Johns Hopkins University and received his medical degree at the University of Chicago in 1932. Dr. Bernstein serves at the Detroit Orthopaedic Clinic; is Chief of Pediatrics, Sinai Hospital, Detroit, and is on the staff of Children's Hospital of Michigan. Dr. Bernstein served with the Armed Forces from 1942-1946. He is a member of the Pediatric Research Society, the American Academy of Pediatrics and the Detroit Pediatric Society. Dr. Bernstein's subject at the Conference will be "Medical and Psychological Aspects of Childhood Disease and Acquired Disability."

Freedom Perpetuates Security

When man is free, he is secure. He can meet the challenge of a competitive life because he is free to choose, to speak, and to act. The liberty to select his place of residence, his work and education, his mate for life, his religion, and his associates is fundamental in a democratic society. Attitudes and characteristics that are formed during youth contribute to man's potentials and influence his choice of the many and varied opportunities that are available.

Through the developmental period of childhood man grows in strength and stature. He weathers the minor adversities of youth, gains in confidence, self control and judgment. Through advancing maturity, he more fully recognizes and appreciates the part played by family and friends, is guided and strengthened by his religious faith, and demonstrates a social consciousness. The career years offer many stimulating experiences, call for increased productivity and, at the same time, demand the assumption of greater responsibility.

Wise planning and continued education during life can provide security and courage to meet any unforseen catastrophies which may occur to the person, his family, or property. Such trauma for the less well prepared person may have serious results which are widespread and long lasting.

To help increase man's on-the-job security, the frontiers of industry have pushed forward rapidly in the past decade. New and modern plants have been erected which are designed for the safety and convenience of the worker; hours and wages have been adjusted to permit freedom for leisure time activities and the recompense to enjoy these; apprentice training has been improved and extended. Savings plans during the salaried years insure independence for the later nonincome producing period. Routine physical examinations and compensation insurance offer security for good health and care in the event of an accident.

Medical science has progressed at an equally rapid pace. New diagnostic and treatment pro-

cedures have been developed and follow-up care improved. One medical branch which has received added impetus through research is industrial medicine. Another important advancement is the extended care program which continues until such time as the worker is again a productive member of society. In some cases this may involve a complete retraining period for an entirely different job.

In both industry and medicine studies are being conducted relative to the effect of age on physical and mental changes and performance. Since the span of life is being extended and the alterations of aging decelerated, the differentiating age for retirement is less well defined. Knowledge gleaned through intensive investigation has enhanced the freedom and security of the later years of life.

The children of the present will be better prepared to be the adults of the future due to the progress of today. Each step in the four day program of the 34th Annual Conference of the American Physical Therapy Association is an integrated progression culminating in fulfillment for a design for living.

Second Annual Meeting

Self Employed Section
of the
American Physical Therapy Association

Hotel Statler—Detroit, Mich.

Sunday, June 23, 1957

8:00 A.M. 9:30 A.M. Registration
9:30 A.M. 10:00 A.M. Professional Relations
10:00 A.M. 10:30 A.M. Professional Problems
10:30 A.M. 11:15 A.M. Income Survey
NOON—Executive Committee Meeting
2:00 P.M. 4:30 P.M. Business Meeting

Agenda—Business Meeting—

Call Meeting to Order

Introduction of Section Officers and Dignitaries
Announcements

Reading of Minutes of New York Meeting by Recording Secretary, Ed Rathjen.

Approval of Minutes

Reports of Standing Committees and Officers

Nominations Committee — Slate of Officers — Charles Magistro—

Formal Nominations from floor and written ballot by all section members

Conference Planning Committee ... Marion Boyer
Vice-Chairman ... Marion Boyer
Corresponding Secretary ... Hal Feldman
Treasurer ... Routh Dixon

Reports of National Study Committees

Committee on Printed Forms ... Eloise Draper
Committee on Ways and Means ... Nick Peters
Committee on Relations ... Louis Pozarny
Bob Dicus
Committee on Insurance ... Charles Magistro
Committee on Legislation ... Joseph Breuer
Committee on International Relations ...
Hyman Jampol

Old Business

Recommendations of last year's meeting—Bob Dicus
Other

New Business

Proposed amendments to Rules of Order
Introduction of new officers ... Charles Magistro
Tape library on specific topics ... other literature
Plans for future ... wishes of membership
Membership qualifications ... criteria

Final Announcements—New Committees Announced

Adjournment

Tuesday, June 25, 1957

Breakfast or luncheon ... guest speaker

Student Members

(*continued from page 314*)

University of Connecticut

Betty Cann	Mildred Kahler
Kenneth Gertz	John Livieri
Emily Gulla	Virginia Tootell
Judith Angell	Susan Mauzy
Beverly Bills	Marjorie Olson
Patricia Bradshaw	Elizabeth White
Carol Hock	Lois Yasgur

University of Minnesota

Roberta Abbey	Robert Hummel
Richard Craven	Kay D. Smith

University of Oklahoma

Jane L. Ard

Washington University

Edris Tannenbaum

Student Column

What Does the APTA Contribute to the Profession?

"The American Physical Therapy Association is the professional organization for physical therapists who are graduates of schools approved by the Council on Medical Education and Hospitals of the American Medical Association." This is a commonly used opening sentence of a letter written in response to requests from persons interested in becoming members of our Association.

The American Physical Therapy Association is to physical therapists what the American Medical Association is to physicians. Such associations of professionally qualified persons contribute to the growth and development of their respective professions in various ways—maintenance of standards for education and performance; opportunities for furthering education of persons practicing the profession; publication of original articles and reporting of research in order that new developments and new information may be disseminated.

The organization of the American Physical Therapy Association was an expression of the need to identify the physical therapy profession and to insure its future development in the best interest of patient care. As expressed in *Occupational Licensing Legislation in the States*, one of the criteria of a profession as distinguished from other occupations is "Its practitioners have a formal association that fosters the ethic, sets standards of competence and improves performance."

The American Physical Therapy Association meets this described need and extends far beyond to provide services to the profession and its members. All physical therapists in the United States have benefited directly or indirectly from the joint efforts of the Association on the national level and the 58 component chapters functioning on the local level.

As spokesman for physical therapists, the Association has played a vital role or has assumed leadership in the following achievements:

Professional status recognized by the medical profession, the Armed Forces, and United States Civil Service.

Legal recognition of physical therapists through state licensure or registration.

Participation in evaluation of the Salk poliomyelitis vaccine.

The Association contributes to the development of the profession through:

Annual Conference which serves as a refresher course as well as an opportunity to keep abreast with advances in the field.

Annual institutes sponsored jointly with the American Hospital Association and the Office of Vocational Rehabilitation.

Chapter educational programs, seminars, and institutes.

Publication monthly of the *Physical Therapy Review* which includes original articles, abstracts, book reviews, and professional news items.

Sections composed of common interest groups.

High standards of ethical conduct as set forth in the Association's Code of Ethics.

Cooperation with the Professional Examinations Service in the construction of validated examinations.

Guidance to members regarding professional problems and employment opportunities.

Guidance to agencies and assignment of physical therapists during poliomyelitis epidemics or emergencies.

Guidance to employing agencies seeking advice on establishing or developing physical therapy service.

Guidance to qualified foreign-trained physical therapists in the interest of maintaining professional standards.

Periodic personnel policy surveys and publication of recommended personnel policies and salary levels commensurate with responsibility.

Preparation and distribution of informational materials in the interest of attracting personnel to the field.

Intangible contributions to the profession are related to the benefits derived from participation in a professional group—stimulation, the opportunity to discuss common problems, to refresh knowledge and gain new knowledge—only the American Physical Therapy Association provides these opportunities to the physical therapy profession.

REFERENCE

Spector, S. and Frederick, W.: Occupational Licensing Legislation in the States. Chicago. The Council of State Governments. 1952

An Approach to Instruction in Patient Care

Janice Heidenreich and Terri Schaffner

A course entitled "Introduction to Patient Care" is being offered at the School of Physical Therapy, Medical College of Virginia, for the purpose of providing the Junior physical therapy student with early patient contact. The course is designed with the realization that an important goal of every physical therapy student's training is the care of the patient. It represents a cooperative effort of the School of Nursing, the School of Physical Therapy, and the hospital Nursing Service. The course has three major objectives: 1) to orient the beginning physical therapy student to the hospital atmosphere, 2) to instruct him in the technics of working with patients in both the acute and the chronic stages of illness, and 3) to develop in him an understanding of the physical, mental, and social problems related to the care of the total patient.

At the initial meeting during the first week of school, the student is given a general outline of the course which consists of 90 hours of formal classroom lectures, laboratory sessions dealing with the handling of patients, mornings spent in the wards working as a hospital aide, and informal meetings devoted to the discussion of any questions which he might have concerning his hospital experiences. It is stressed that the benefits derived from this training will be in direct proportion to the effort and interest the student expends.

Junior physical therapy students, Medical College of Virginia, Richmond.

Figure 1. Under the supervision of the nurse, two students are learning to operate the Stryker Frame.

Informal classroom lectures presented by the School of Nursing include such subjects as bedmaking, sterile and aseptic technics, and blood measurements. In addition, the staff of the School of Physical Therapy provides instruction in handling patients, bandaging, medical records, medical terminology, and the operation of the Stryker frame, rocking bed, and respirator. Throughout the course the student is given an opportunity to develop his skills through practical application. Visits to hospital departments such as Medical Records, Central Supply, and the Diet Kitchen provide an insight into the vast amount of behind-the-scenes work which is necessary to the coordinated functioning of the hospital.

Since it is felt that the earlier the student is initiated into working directly with the patient the more effective and meaningful will be his training, work on the wards begins immediately. Here, under the guidance of a nurse, the student performs duties related to patient care at a subprofessional level. Here, for the first time, he may see a severely disabled person. While bathing a patient, he becomes acquainted with the feel of handling a paralyzed limb or a spastic muscle; when feeding a patient, he begins to understand, through conversation, some of the fears, anxieties, and the social and economic problems which result from illness. Such understanding and experience cannot be gained from textbooks, but must be acquired through contact with the sick and disabled. The student is encouraged to read patient charts with attention not only to the physical history, diagnosis, and treatment, but also to the social history, in order that he may realize that illness presents more than a physical problem.

Following each session of hospital work the class meets with the instructor for informal discussions of the problems encountered on the wards, and of the various patients observed and assisted. Students who are interested in learning more about particular diseases are provided with material for further study and their findings are reported to the entire class. Such reports are on a voluntary basis. This situation has proved to be far more conducive to learning than that which would exist were topics assigned and reports required without consideration of the individual student's interests.

Another opportunity for patient-student contact is provided by allowing the student to observe orthopedic surgical procedure involving conditions which he, as a physical therapist, will later

treat. Information obtained from these procedures is shared with the other students during the informal discussion periods, and the patient's progress is followed throughout his period of recovery. It is felt that this gives the student further insight into the many services which help to hasten the patient's recovery, and a deeper appreciation of the contributions being made by all the members of the medical team.

Thus, in these ways the physical therapy student is oriented to the hospital atmosphere. He is provided with an over-all view of the members of the hospital staff working together for effective and efficient patient care, and he is impressed by the teamwork which exists among them. The special reports aid in understanding and therefore in caring for a patient suffering from a given illness. The student can see how theoretical learning is translated into actual patient care. He learns that the patient must be encouraged to do as much as possible for himself. Through his laboratory practice he acquires the skill needed for working with a patient, and by working at the subprofessional level in the hospital he develops the ability and confidence that will be important assets to him when he begins his clinical training in physical therapy. As one student says, "Just being there and talking with the patients was quite an experience." Perhaps the outstanding feature of the course is being able to discuss these experiences in an informal atmosphere.

One may wonder if a course which, for its effectiveness, depends so completely upon student initiative could be successful in achieving its aims. In the minds of the physical therapy students at the Medical College of Virginia, who will begin their clinical training with some insight and experience as to how the patient will react as they meet and work with him, there is no doubt as to its success. They are enthusiastic advocates of the old adage "experience is the best teacher," particularly if the experience is self initiated.

Figure 2. The instructor is demonstrating the necessity for support of paralyzed muscles in the upper extremity.

News From the Schools

Charity Hospital

Students at Charity Hospital have been interested participan*s in many extra-curricular professional meetings. Among these have been the sectional meetings of the American College of Surgeons, a Symposium on Management of Amputations, and a Symposium on Scoliosis. Of particular interest was a Symposium on the Comprehensive Care of Burned Patients. This program was presented in New Orleans by a guest team from the University of Texas Medical Branch at Galveston.

Hermann Hospital

A new high in enrollment was achieved by the Hermann Hospital School: 26 students comprise the class of 1957. The school has just been assigned its own permanent class room and laboratory, and the new facilities also include a small lounge equipped with couches, chairs and most important—a coke machine!!!

We wish to thank the school reporters who furnish the news items used each month in the Student Column. Reporters this month are Sylvia von Osthoff (Charity Hospital) and Judith Nelson (Hermann Hospital).

Physical Therapy Programs

APPROVED BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS OF THE AMERICAN MEDICAL ASSOCIATION

Schools offering the four year program leading to a baccalaureate degree accept high school graduates and transfer students. Schools offering the 12 to 16 months' program leading to a certificate accept students who have completed all or most of their undergraduate work providing they meet certain course requirements. Recipients of a degree and/or certificate have equal professional status. For specific information regarding each school's entrance requirements, tuition, and other fees, write to the physical therap, director indicated below. All students should investigate course requirements *early*.

	Degree	*Certificate*
CALIFORNIA		
Mary J. Dodge School of Physical Therapy Childrens Hospital Society 4614 Sunset Boulevard Los Angeles 27	‡	†
Ronald A. Hershey School of Physical Therapy College of Medical Evangelists 312 N. Boyle Avenue Los Angeles 33	†	†
Lucille Daniels Division of Physical Therapy Stanford University Stanford (Palo Alto)	†	†
Margery L. Wagner Curriculum in Physical Therapy University of California The Medical Center San Francisco 22	†	†
Charlotte W. Anderson Department of Physical Therapy University of Southern California University Park Los Angeles 7	†	†
COLORADO		
Dorothy Hoag Curriculum in Physical Therapy University of Colorado Medical School Denver 20	†	†
CONNECTICUT		
Frances Tappan School of Physical Therapy U 101 University of Connecticut Storrs	†	
ILLINOIS		
Elizabeth C. Wood Course in Physical Therapy Northwestern University Medical School 303 East Chicago Avenue Chicago 11	†	†
IOWA		
Olive C. Farr Physical Therapy State University of Iowa Hospitals Iowa City		†
KANSAS		
Ruth G. Monteith Section of Physical Therapy University of Kansas Medical Center Kansas City 12	†	†
LOUISIANA		
Isadore Brown, Acting School of Physical Therapy Charity Hospital of Louisiana New Orleans 12		†
MASSACHUSETTS		
Adelaide L. McGarrett Physical Therapy Department Boston University Sargent College 6 Everett Street Cambridge 38	†	†
Constance K. Greene Department of Physical Therapy *Bouve-Boston School, Tufts University Medford 55	†	
Shirley M. Cogland *Program in Physical Therapy Simmons College-Children's Hospital 300 Longwood Avenue Boston 15	†	†
MICHIGAN		
Virginia Wilson Curriculum in Physical Therapy University of Michigan University Hospital Ann Arbor	†	†
MINNESOTA		
Darrell D. Hunt School of Physical Therapy Mayo Clinic Rochester		†
Ruby M. Overmann Course in Physical Therapy University of Minnesota 860 Mayo Memorial Hospital Minneapolis 14	†	

* Accepts women students only.

‡ Baccalaureate degree available from an affiliating college or university.

	Degree	Certificate
MISSOURI		
Sr. M. Imelda, S.S.M. Department of Physical Therapy St. Louis University 1325 South Grand Boulevard St. Louis 4	†	
Beatrice F. Schulz Department of Physical Therapy Washington University School of Medicine 660 So. Kingshighway St. Louis 10	†	
NEW YORK		
Dorothy L. McLaughlin *School of Physical Therapy Albany Hospital-Russell Sage College New Scotland Avenue Albany 8	†	†
Mary E. Callahan Courses for Physical Therapists Columbia University College of Physicians & Surgeons 630 West 168th Street New York 32	†	†
Elizabeth C. Addoms Physical Therapy Curriculum School of Education, New York University Washington Square East New York 3	†	†
Mildred F. Heap Program in Physical Therapy University of Buffalo 2183 Main Street Buffalo 14	†	†
NORTH CAROLINA		
Helen Kaiser Division of Physical Therapy Box 3403, Duke Hospital Durham		†
OHIO		
Robert D. Kruse Course in Physical Therapy Frank E. Bunts Educational Institute 2020 East 93rd Street Cleveland 6		†
Gladys G. Woods School of Physical Therapy Ohio State University University Hospital Columbus	†	†
OKLAHOMA		
Thelma Pedersen School of Physical Therapy University of Oklahoma, Medical Center Oklahoma City 4	†	†
PENNSYLVANIA		
Dorothy E. Baethke Division of Physical Therapy University of Pennsylvania 205 S. 34th Street Philadelphia 4	†	†
Kathryn Kelley Curriculum in Physical Therapy D. T. Watson School of Physiatrics Leetsdale	‡	†
PUERTO RICO		
(All classes given in Spanish) Lutgarda Vega School of Physical & Occupational Therapy Professional Bldg., 8th Floor Stop 22, Santurce		†
TEXAS		
Doris E. Porter Grady Vaughn School of Physical Therapy Baylor University Hospital Dallas 1	†	†
Cecelia J. Lee School of Physical Therapy Hermann Hospital Houston 25	‡	†
Ruby Decker School of Physical Therapy The University of Texas Medical Branch Galveston	†	†
VIRGINIA		
Susanne Hirt School of Physical Therapy Medical College of Virginia Richmond 19	†	
WISCONSIN		
Beth J. Phillips Curriculum in Physical Therapy Marquette University School of Medicine 561 North 15th Street Milwaukee 3	†	
Margaret Kohli Course in Physical Therapy University of Wisconsin Madison 6	†	†
U. S. ARMY MEDICAL SERVICE		
*Physical Therapy Course Army Medical Service School Brooke Army Medical Center Fort Sam Houston, Texas Write to: The Surgeon General Department of the Army Washington 25, D. C. Att.: Personnel Division		†

* Accepts women students only.

‡ Baccalaureate degree available from an affiliating college or university.

Please direct all inquiries regarding tuition, entrance requirements and other specific information to the school and *not* to the American Physical Therapy Association.

Abstracts

Discoid Lateral Meniscus of the Knee Joint. Nature, Mechanism, and Operative Treatment

Emanuel B. Kaplan (Dept. of Anatomy, Columbia University, New York), J. BONE & JOINT SURG., 39-A: 77-86, January 1957

The clinical entity known as "discoid lateral meniscus" was investigated in order to determine its etiology and to explain the mechanism of the click which is frequently observed during flexion and extension of the knee joint. Inasmuch as treatment consists in removal of the discoid meniscus, an attempt was also made to find a more direct method of removal which would be more consistent with the surgical anatomy of this condition.

In a reported embryological study of the menisci, Kaplan established that in no stage of development, from the earliest phase to birth, does the lateral meniscus appear in the form of a disk.

In a series of comparative-anatomy dissections, it was found that none of the animals available, representing mammals, birds, amphibians, and reptiles, had a lateral or medial meniscus resembling a disk.

Observations made at operation showed that in patients with discoid minisci there is no attachment of the posterior horn to the tibial plateau. Instead of this attachment, there is a continuous Wrisberg's ligament (meniscofemoral ligament) which forms a link between the posterior horn of the meniscus and the medial condyle of the femur. This is similar to the normal arrangement observed in all animals except man.

On the basis of these findings, it was concluded that patients with discoid minisci represent persons who are born with a normal lateral meniscus, as far as form is concerned, but with an anatomical variation which consists in the posterior horn of the lateral meniscus not being attached to the tibial plateau. In these persons, as in all animals but man, the meniscofemoral ligament joins the meniscus to the medial condyle of the femur. This anatomical variation does not permit the normal limitation of the movements of the lateral meniscus which is required by the normal range of motion of the human knee joint.

The discoid form develops gradually after birth and is the result of abnormal motion of the lateral meniscus. The hypertrophied meniscus actually varies in shape but has been fancifully called "discoid."

The Management of Pectus Excavatum

C. E. Koup (University of Pennsylvania, Philadelphia), S. CLIN. NORTH AMERICA, 36: 1627-1637, December 1956

There is no agreement concerning the etiology of this defect, no uniformity of opinion concerning the physiological deficits produced by the funnel chest, no established indication for operation, and no critical cardiac or pulmonary function tests to establish such indication. The author has operated on a number of infants before the age of 4 months using a minor procedure, and on a series of older children using a major reconstruction of the thoracic cage. He has also followed another series of nonoperative older children.

The deformity causes displacement of the heart to the left and upward. This could be a contributory cause of decreased exercise tolerance. Frequent upper respiratory infections in infants with pectus excavatum could be due to the inability to produce an effective cough.

The author lists indications for operation as physiologic, orthopedic, cosmetic, or psychological. Physiologic indications are difficult to evaluate accurately. Cosmetic and psychic indications should be considered since the operation carries small risk in comparison to the benefits derived.

When the operation is contemplated on an infant, the minor procedure is followed before the age of 4 months. Older children who are followed for any increase in the depth of the funnel, are usually operated on between the age of 2 and the age of 4.

The minor procedure consists of excision of the xiphoid and separation of the rectus sheaths from the lower costal cage. Major reconstruction consists of resection of all the deformed cartilages and a 180° rotation of the resected sternum. The thoracic plate is then wired into its new position. An asymmetrical deformity does not lend itself to this procedure. A good cosmetic result is obtained by the use of a transverse incision.

In general a conservative view is taken toward recommending thoracic reconstruction for the correction of pectus excavatum. The minor procedure is undertaken for infants more frequently with the hope that later more serious procedures can be avoided. There are still many unknowns in the management of pectus excavatum.

Restoration of Quadriceps Function in Neglected Tears of the Patellar Tendon

H. Kelikian, E. Riaski and J. Gleason (Northwestern Medical School, Chicago), SURG., GYNEC. & OBST., 104: 200-204, February 1957

In old, neglected tears of the patellar tendon several sequelae intervene which must be taken into account in efforts directed toward restoration of quadriceps function: the quadriceps group of muscles undergo atrophy of disuse and lose their tone; the patella is pulled up on the femur and later becomes transfixed to the front of that bone; the articular surfaces of the patella and femur yield to degenerative changes and become rough; the suprapatellar pouch is filled with adhesions and obliterated; distally the torn end of the patellar tendon seals with scar and its main body shrivels and shreds; occasionally calcific deposits are present within the core of the patellar tendon. The retraction of the patella and the atrophy of the quadriceps muscles are reversible.

In the surgical procedures described, a preliminary release of all adhesions binding the patella and quadriceps tendon is accomplished. A weight and pulley arrangement attached to a Kirschner wire which is passed through the patella provides a means of overcoming the contracture of the quadriceps and brings the patella down into the intercondylar notch of the femur. It also enables the patient to practice quadriceps setting exercises against tension.

When the quadriceps muscle has regained a portion of its lost power and the patella has descended to an inch from the level of the superior articular surfaces of the tibia, surgical repair of the torn tendon is undertaken.

A substitute structure, the tendon of the semitendinosus is used to supplant the torn patellar tendon. This is used in preference to the semimembranosus because it yields a

longer tendon. At the second surgical sitting, following removal of the Kirschner wire, the semitendinosus is severed at the musculotendinous junction. The free end of the semitendinosus tendon is passed through a tunnel drilled under the tibial tubercle, going from the medial to the lateral side and then up to a drill hole in the patella through which it is threaded in reverse direction, from the lateral to the medial side. The end of the tendon is finally brought down and sutured to its own stem or to a pedicle fashioned from one of the neighboring tendons. Following this surgical procedure, the extremity is encased in a long cylinder cast incorporating the original Kirschner wire through the patella. Functional exercises are started 6 weeks later when the cast and pin are removed.

A representative case is described as a 45 year old male who presented definite disruption of the patellar tendon 2 years after an avulsion of the lower pole of the patella. Examination revealed atrophy of the quadriceps of the involved extremity, fixation of the patella, flexion of the knee less than a right angle, and extension 45° from being complete. The patella rode about an inch higher than the one on the uninvolved extremity. The previously described surgery was performed. Nine years after surgery, the patient continued to show satisfactory results. He could flex his knee almost to a right angle and extend it almost fully. He had no pain in the knee and no tired feeling in the thigh, and he could run and climb stairs without any difficulty whatsoever.

A Note on the Treatment of Involuntary Movements of the Arm by Resection of the Brachial Plexus

Carl J. Bridges and Gilbert Horrax (Department of Neurosurgery, The Lahey Clinic, Boston, Massachusetts), J. NEUROSURG., 14: 68-73, January 1957

For more than thirty years, surgical procedures have been used for the relief of involuntary movements and spasticity, as seen in paralysis agitans, chorea, and birth palsy tremors.

Various methods, such as sympathetic ganglionectomy, rhizotomy of the fourth cervical to the fouth thoracic posterior roots, destruction of the dentate nucleus of the cerebellum, a combined lateral pyramidotomy with ventral pyramidal tractsection on the opposite side, have been attempted and, as reported in 1948, "All operations for treatment of involuntary movements, thus far, were distinctly experimental and all were unsatisfactory in several ways."

The one case presented in this paper is of a patient with unilateral severe athetosis of obscure origin, and probably still progressive at its central lesion. The cords of the brachial plexus and peripheral nerves of the upper extremity were resected 36 years ago leaving the man, well satisfied, with a flaccidly paralyzed upper extremity, rather than the spastic arm with involuntary and uncontrolled movements.

Many procedures, formerly used, have been discarded as useless, or as producing too great a motor deficit and, of the most recently used methods, the follow-up period has not been long enough to obtain the end results.

Cineplasty: An End-Result Study

E. A. Brav, et al. (Walter Reed Army Hospital, Washington), J. BONE & JOINT SURG., 39-A: 59-76, January 1957

An end-result study of 78 biceps cineplasties and 29 pectoral cineplasties reveals that 61.7 per cent of the patients were wearing their prostheses at the end of a year or more. In the biceps-cineplasty group the percentage was 73.1 and in the pectoral-cineplasty group it was 31.0.

Cineplasty should be performed only at established amputation centers where all the members of the clinic team can participate in the proper selection of patients, where there are surgeons familiar with the operative procedure, where training supervision by experienced physiatrists is available, and where the fitting can be done by prosthetists who understand the peculiar problems of the cineplasty amputee. There must also be provision for subsequent specialized prosthetic maintenance.

Cineplasty operations should be limited to carefully selected patients. The local condition of the stump, the desire and motivation of the patient for the procedure, and the functional requirements of the patient should all be taken into consideration.

When these requirements are met, the advantages of the biceps-cineplasty procedure to the below-the-elbow amputee are sufficiently great so that the operation should be offered to him. The advantages of biceps cineplasty to the long above-the-elbow amputee are not so apparent, and the usefulness of this procedure remains controversial.

At present pectoral cineplasty has limited usefulness. It should be employed only in patients with such exceptional conditions as bilateral shoulder disarticulation; in such a patient an additional source of prosthetic control is urgently required.

Cineplasty is not advisable in amputee patients prior to adolescence, and it is not usually cosmetically acceptable to women.

Growth in Still's Disease

B. M. Ansell and E. G. L. Bywaters (Postgraduate Medical School, London), ANN. RHEUMAT. DIS., 15: 295-319, December 1956

The factors governing normal growth in man are complex and their interrelationships need clarification. In man this can be accomplished by a study of diseases and their treatment which may modify growth. These diseases may be classified as (a) general disturbances of a long-lasting nature; (b) local disturbances of nutrition, metabolism, and function; and (c) certain endocrine and metabolic diseases. Still's disease was considered by the authors to be a condition which would lend itself to the study of the interrelationship of the various factors in growth, because not only is there a local disturbance of growth due to nearby joint disease, but there is also a general disturbance of metabolism, all of which may be affected by treatment.

A survey of the general bone and growth development of 119 children suffering from Still's disease was undertaken. Changes in height, weight, and bone growth were followed over a period of years. X rays were taken of both hands and wrists on entry to hospital, at intervals during the stay, and at the annual follow-up examinations. Abnormality was defined by comparison with published normal standards and with a small series of patients. In cases with flexion deformities of the hips and/or knees, the heights were not used for comparison.

In the cases studied, it was noted that the failure of normal growth in height and weight was closely associated with the activity of the disease, occurring early and tending

to correct itself as the disease became inactive. Only with fever and prolonged disease activity were marked residual defects in height and weight observed. Most of the bizarre growth anomalies in this series developed as a result of local disease and were due directly to premature fusion of the epiphyses. In children without hand involvement, carpal maturity was within one-year limits of normality, but in half the cases where the carpus or wrist was involved, carpal maturity was advanced.

Male sex hormones over short periods caused in some children a rapid gain in weight which was maintained; cortisone therapy over prolonged periods produced temporary obesity and a slowing of growth in height at all but minimal levels of dosage. There was little apparent effect on skeletal maturation.

It was concluded that in Still's disease there is a general retardation of growth affecting both height and weight, such as is seen in any long-standing generalized disease of childhood. Local disease may lead to either increased or decreased metaphyseal growth rates, to premature epiphyseal development, and sometimes to premature fusion.

The Management of Paralytic Scoliosis

John H. Moe (Gillette State Hospital for Crippled Children, St. Paul, Minnesota), SOUTH M. J., 50: 67-81, January 1957

This is a review of several methods used in the surgical correction of paralytic scoliosis in children. A conservative treatment program is instituted first, release of contractures, etc., followed by fusion. Correction of iliotibial band contractures and muscle imbalances, obtaining a flexible spine, a shoe lift, or a Risser cast—but never a conventional back brace—were used in the conservative treatment.

In the selection of fusion patients, age is not a determining factor above 9 years. The author has had good results also with patients below the age of 9 years, and has not noted a recurvatum deformity. Full maturity of the spine is not necessary for fusion.

The methods of correction used were hinged turnbuckle cast, Milwaukee brace, Risser frame and Risser cast. This correction was best maintained by keeping the patient supine and not permitting ambulation.

The fusion area was determined by three criteria: 1) vertebral interspace wedging, becoming neutral or reversed; 2) vertebral body tipping, becoming maximal; 3) neutral rotation being present. Four fusion technics were employed and autogenous bone or bone from a bank was used. It was found that autogenous bone was superior to bone from a bone bank. The technic that was meticulous and wide, with careful removal of all soft tissue, was the most satisfactory. The best fusion was obtained from facet fusion and autogenous bone in the graft.

The majority of the pseudoarthroses occurred between D-11 and D-12 and between D-12 and L-1. Treatment of such conditions were more successful if discovered early. A simple refusion was then performed and no loss of correction resulted.

Pulmonary Function in the Cardiac Patient

D. W. Cugwell, W. H. Abelmann, and E. A. Gaensler (Northwestern University School of Medicine, Chicago), M. CLIN. NORTH AMERICA, CHICAGO NUMBER: 225-234, January 1957

Abnormal pulmonary function in patients with heart disease is a frequent occurrence. These abnormalities may be due either to pulmonary changes secondary to a cardiac lesion or to pulmonary disease independent of and co-existing with heart disease. Evaluation is difficult since there are many signs and symptoms in common.

The author discusses the basic principles of pulmonary function and methods of evaluating its efficiency. Ventilatory insufficiencies may be divided into obstructive and restrictive types. Intrapulmonary gas distribution is discussed from the standpoint of diffusion abnormalities and arterial blood gas abnormalities. The differences between pulmonary function in the patient with the underlying cause being heart disease and unrelated heart and lung disease and lung disease secondary to heart disease, are discussed. The author concludes (1) that pulmonary function can be divided into three major categories — ventilation, intrapulmonary gas distribution, and diffusion. (2) The majority of patients with significant pulmonary disease have abnormal ventilatory function. These ventilatory functions can be tested by maximal breathing capacity, breathing patterns, and vital capacity determinations. (3) Measurements of pulmonary function may be clinically helpful when cor pulmonale is suspected but underlying pulmonary disease is clinically obscure, when a patient shows symptoms out of proportion to the clinically evident cardiac lesion, and for presurgical evaluation, particularly cardiac surgery.

Long Form Results of Orthopaedic Surgery in Cerebral Palsy

Winthrop M. Phelps, (Baltimore), J. BONE & JOINT SURG., 39-A: 53-58, January 1957

Orthopedic surgery has a definite place in the treatment of cerebral palsy. However, of the many surgical procedures which are successful in poliomyelitis not all are adaptable to cerebral palsy, since the characteristics of the two conditions are entirely different.

The effects of growth and consequent recurrence of deformities must be considered in evaluating the functional results. Tendon lengthenings and tenotomies are more successful after growth has been completed. They are seldom successful when performed during the period of growth unless the desired tendon length can be maintained by use of a brace. The status of the antagonists of all muscles for which surgery is contemplated must be carefully determined.

Muscle transplantation in both spastic and athetoid patients always fails because the injury in cerebral palsy does not involve individual muscles, as in poliomyelitis or other lower motor neuron lesions, but affects total joint function or position, which is mediated through the upper motor neurons. In spasticity there is stimulation and in athetosis, release of the upper motor neurons. Thus good long-term results cannot be obtained from muscle transplantation in either of these conditions.

The presence of athetoid shift must be recognized. In some instances external fixation with a brace or cast can be used to determine whether a favorable or unfavorable shift would result from surgery.

Bone surgery statistically has proved highly successful and should be the basis for further development in the field of cerebral palsy. This was also Pollock's conclusion. The

author notes that among tendon procedures hamstring and adductor tenotomies produced a relatively higher incidence of successful results, thus confirming the results of this study.

It is hoped that this survey will be a guide in the development of orthopedic surgical procedures for the treatment of cerebral palsy in the future.

Recommended Standards for Hospital Out-Patient Services for Children with Cerebral Palsy by the Subcommittee on Medical Care of the Coordinating Council for Cerebral Palsy in New York City, Inc.

L. Slobody, W. Cooper, G. C. Deaver, J. Greene, E. B. Schlesinger, W. B. Snow, J. Tobis and H. M. Wallace (Coordinating Council for Cerebral Palsy in New York City, Inc., 47 West 57th St., New York 19, N. Y.), AM. J. PHYS. MED., 35: 353-359, December 1956

Cerebral palsy is recognized as an involved and complicated medical disorder which may interfere with the physical independence of a person by restricting his movements, his speech, his hearing, his vision, and even his ability to learn. It disturbs his emotional growth and his relationships with his friends and members of his family. The care of the cerebral palsied child requires that many facilities work together to supply physical, mental, emotional, and social needs.

This report of the Subcommittee on Medical Care, which was presented to and accepted by the Coordinating Council for Cerebral Palsy in New York City, Inc., outlines recommended standards, policies, and procedures which should serve as guides in the organization and development of outpatient services in hospitals furnishing care for children with cerebral palsy.

The committee recommends that outpatient services for children with cerebral palsy be established in hospitals approved by the Council on Medical Education and Hospitals of the American Medical Association for residency training in those specialized fields normally required for adequate professional care of these children. The hospital should also provide inpatient service to insure continuity of treatment. A program designed to train the varied personnel who function as part of the team should be established in this hospital, wherever possible. The outpatient service for children with cerebral palsy should provide complete evaluation and diagnosis and should plan and coordinate the medical, social, and emotional rehabilitation programs of each patient.

This outpatient service should be under the medical direction of either an orthopedic surgeon, a pediatrician, physiatrist, or neurologist who is a diplomate of his respective specialty board. Representatives of the specialties of orthopedic surgery, pediatrics, neurology, psychiatry, and physical medicine and rehabilitation should be available to form the medical staff. In addition, it may be helpful to appoint a member of the nonmedical professional staff to the position of coordinator to assist the medical director in the implementation of the program. Dentists and orthodontists should be assigned for the provision of care when indicated.

Recommendations are outlined for the organization of the speech therapy, occupational therapy, and physical therapy services. The qualifications of personnel to staff these services is stated and a guide to assist in determining the total number of therapists required in each category is given. Other personnel necessary to complete this medical team are the psychology personnel, medical and psychiatric social workers, secretarial and clerical staff, as well as those responsible for a planned recreation program.

The staff of an outpatient service for cerebral palsied children should be responsible for the initial evaluation of each child which should include the complete medical and social history, physical examination, examinations such as dental evaluation, psychometric testing, cardiac, psychiatric, speech and others as indicated. Findings of these evaluations should be presented at a meeting of the entire professional staff and a complete etiologic, anatomic, and functional diagnosis should be made for each child and a therapeutic regime outlined. At properly spaced intervals, dependent upon the needs of the child, follow-up evaluations should be scheduled and the treatment plan reviewed and revised as indicated. Qualified medical direction and supervision of the various therapeutic programs in physical therapy, occupational therapy, and speech therapy will assure the efficient utilization of these services.

The value of weekly staff conferences to review the operation of the service, to present new cases or review old cases, to furnish inservice staff education programs, as well as for other special purposes, is emphasized. Arrangements should be provided for educational guidance and, for the older children, vocational testing, training, and placement. Another important function of such an outpatient service is the guidance and counseling which may be given to the parents. Parents should be taught to participate in the daily program of the child and the service should provide for continuity of care between the outpatient service and the home by utilization of the community public health nursing agency or agencies.

Accurate and complete records should be kept for each child to include all pertinent information. Annual statistical data relative to the work-load and activities of the service should be kept. In addition, evaluation records, either annual or long-term, should chart the degree of improvement for the members of the patient group. The physical plant should provide adequate space for the efficient operation of all of the necessary services.

As an appendix to this report, it is recommended that the nomenclature accepted by the American Academy of Cerebral Palsy be used. This classification is listed.

Syndrome of Median Nerve Compression in the Carpal Tunnel

Bertil Blackberg and Jorgen Fex (The Neurological Clinic, Lund, Sweden), ACTA ORTHOP. SCANDINAV., 26: 2: 120-135, 1956

The diagnosis of carpal tunnel syndrome requires that the symptoms are limited to the musculature innervated by the median nerve and to the skin distal to the carpus without involvement of the region supplied by the ramus palmaris. The muscle atrophy is characteristically limited to the proximal, radial part of the thenar eminence. The greatest disturbance is opposition of the thumb with the resultant so-called "ape hand." Decreased sensitivity is most common on the palmar aspect of digiti II and III. Trophic and causalgia-like disturbances often occur. The partial atrophy develops successively. Grip-strength is poor, the hand is clumsy, and the performance of work requiring precise movement with an instrument held between the finger and thumb is poor. The anatomy of the carpal

tunnel is described, and variations of the innervation pattern of the median nerve are included.

A survey of literature on median nerve lesions is given and includes cases as far back as 1865 (Paget) to the present. Many interesting facts are brought out in these discussions. The carpal tunnel syndrome is frequently bilateral, and is most often seen in middle-aged women who do housework. One author ascribes partial thenar atrophy to repeated occupational trauma against the motor branches of the median nerve distal to the ligamentum carpi transversum. Other cases suggest that it is not the direct pressure against the nerve but the position of the hand (probably in extension) that causes the compression of the carpal tunnel with subsequent nerve injury.

The authors of this paper present 4 cases of the carpal tunnel syndrome. Difficulties in diagnosis are described. Differential diagnostic possibilities may include amyotrophic lateral sclerosis, cervical rib, scalenus syndrome, plexus neuritis, and herniation of a vertebral disk. The importance of analyzing how the patient holds his tools and the position of the hand during work is stressed. An important diagnostic test was found to be the paresthesiae radiating into the fingers on extreme passive extension of the wrist. The "cuff test" has also been described as a good diagnostic sign. In this test the application of a pneumatic tourniquet round the upper arm will produce pain and anesthesia in the region of the nerve involved quicker than normally. This is a sign that the injured nerve is hypersensitive to ischemia. The treatment of choice is surgical, i.e. division of the ligamentum carpi transversum with decompression of the median nerve.

Assessment of Mobility in Joints

P. O. Williams and B. M. P. Hostest (London). RHEUMATISM 13: 13-16, January 1957

Much importance is placed on carefully recorded joint movement assessment in order to scientifically approach problems of arthritis. The accurate measurement of joint mobility is of great significance in the assessment of joint diseases.

Accurate recording of range of motion is needed to advise patients about the extent of disability. Range of motion is often limited by pain, and active and passive movement must be separately recorded. Causes for loss of movement include pain, swelling, muscle spasm, fibrosis, muscle shortening, and ankylosis — all of which must be found before correct treatment can be successfully applied.

Methods for measuring joint movement are included. Visual methods may only be rough estimates. The protractor is at a disadvantage due to interference of muscle mass or swelling. Since it is difficult to find the fulcrum, this method is open to many inaccuracies. When one is using the triangular method, the fulcrum need not be defined and the true fulcrum is automatically used.

The photographic method includes the Patrick goniometer for measuring wrist rotation, the goniometer by Traut for measurement at knees and elbows, and the spondylometer for measuring spinal movements.

Other methods for measuring range of motion at the elbow, shoulder, hip, knee, fingers, wrist, foot, and spine are described.

The object of the article is to review the methods of measuring joint motions. Simple and quick methods have been described for individual joints in order to increase accuracy in joint mobility measurement.

New Traction Frame for Treatment of Low Back and Cervical Pain

E. F. Mason and B. O. Scott (Department of Physical Medicine, Radcliffe Infirmary, Oxford, England), and H. Epstein and N. Minde (Pittsburgh, Pennsylvania), INDUST. MED. & S., 26: 6-8, January 1957

Since the time of Hippocrates, traction has been used in the treatment of derangements of the spine but no controlled series of cases treated by this principle is available due to lack of a means for applying such traction which could be effectively analyzed. The authors describe a frame and harness which permit the application of cervical and lumbar traction in a manner that lends itself to research studies and the recording of data and which can also be applied as a therapeutic agent.

The apparatus consists of a traction frame of tubular steel. The patient lies on a canvas hammock which is fixed at one end and controlled by a roller at the other. By adjusting this hammock the position of the spine in either the supine or side-lying position can be controlled. By suspending the patient, using a Guthrie-Smith frame fitted to the couch, still greater degrees of flexion and extension of the spine can be produced.

Lumbar traction is applied by the use of a corset, specially designed to transmit the force of the traction without undue restriction of the respiration. Axillary straps attached to the head of the frame furnish counter traction. The cervical halter employed is molded to the chin and occiput, and straps are so arranged that traction may be applied with the head in a position of flexion, extension, or lateral flexion.

This traction apparatus has been employed in the Radcliffe Infirmary for twenty-one months and in the United States for four months. During this period, it has proved efficient, both from a mechanical and therapeutic viewpoint. Results from the clinical use of the traction apparatus have been most gratifying.

The authors present a series of 153 cases of low back pain and 53 cases of cervical pain treated by this method. Optimum traction forces of 25 pounds for the cervical spine and 90 pounds for the lumbar area were used. In the low back patients, 72 per cent were improved, 24 per cent were unchanged and 4 per cent were worse. In the neck cases, 82 per cent were improved, 13 per cent were unchanged and 5 per cent were worse. Cervical cases responded more readily than did the lumbar and best results were observed in cases with acute onset of pain.

The use of the traction apparatus is not recommended following operative procedures, tumors, tuberculosis of the spine, or where there is X-ray evidence of marked osteoporosis.

The Thoracic Herniated Intervertebral Disc Syndrome

William C. Kite, Robert D. Whitehead and Eldridge Campbell (Department of Surgery, Albany Medical College, Albany, New York), J. NEUROSURG., 14: 61-67, January 1957

This paper is concerned with the fact that various symptoms and signs may be present in herniated thoracic intervertebral disk cases and that no syndrome in the thoracic region was found to be typical as in the cervical and lumbar regions.

While progressive pyramidal tract signs usually appear, preceded by

radicular pain at the level of the herniation, this is not always the case and a variety of neurological signs are to be expected. These signs vary and may include complete paraplegia, hyperreflexia, marked midorsal pain, spasticity in lower limbs, weakness, absent position sense in the great toe, the loss of vibratory sense below L-1 level, local back pain, no sensory changes, and the absence of ankle jerks. The duration of the symptoms may vary from two days, to five weeks, or five years, as in the different cases reported. The history and onset also are varied. A fall, or the lifting of a heavy object, could have preceded the gradual or sudden onset of low back pain. It has been noted that the distribution tends to be equal in males and females, and age varies from the young (around the first decade) to the very old. Thoracic herniated disks do not appear more prevalent in any one occupation.

Compression of the spinal cord appears to be much more frequent with herniation in the thoracic than in the cervical spine, so that early diagnosis and removal is more imperative with a thoracic disk than with one in any other location. Since benign cord tumors produce slowly increasing compression, with good recovery following removal, the thoracic disk is subject to sudden additional herniation or extrusion subsequent to the onset of the disease. The sudden alterations in cord compression, along with such protrusions, result in the same lasting neurologic deficit commonly seen in spinal fractures and other rapidly developing compressions of the cord. The urgency for early removal appears to be the only hope for these patients.

Variations in the Response of Normal Persons and Cardiac Patients to the Nylin Heart Function Test

G. C. Sutton, W. P. Swisher and D. C. Sutton (Cook County Hospital, Chicago, Illinois), AM. HEART J., 53: 171-173, February 1957

The Nylin staircase cardiac function test utilizes as an objective measurement of cardiac functional capacity the oxygen debt incurred following standardized work.

Utilization of the test at Cook County Hospital revealed a greater variation in response of human beings to the procedures than was generally recognized. Accordingly, an investigation was undertaken to determine the reliability and variability of the test in reference to standards published by Nylin. The test was performed according to the criteria of Nylin. Two groups totaling 32 men with normal cardiovascular systems performed single tests, while a group of 12 normal persons and persons with cardiac disease performed tests two or three times at intervals of a few days for a total of 31 tests.

The variation in individual response to the test was so great that the procedure lost value as a method of following the course of any single cardiac patient. Among older patients, the daily variation was greater than among the younger. Within these limits the test has value in objective comparison of groups of individuals.

Limitations of the test previously recognized are: the test is slow and time-consuming; the overlapping between normal persons and patients with heart disease is considerable; and it is a measure of pulmonary as well as cardiac function.

A Review of the Role of Physiotherapy in Ante-natal Care

G. J. Gartland, BRIT. J. PHYS. MED., 20: 1-3, January 1957

There is considerable evidence in literature to indicate that antenatal exercises are of little or no value. In Great Britain there is an increasing number of women taking advantage of antenatal and relaxation exercises, and many physical therapists are engaged in an active program of this type.

Most investigators feel that the physiological benefit of antenatal exercise program is negligible. However, several agree that suitable postural exercises will assist in the adjustment of the body to increase in weight and stresses, and others believe that exercises which are to be done postnatally should be started during the antenatal period.

Much more credit is given to the use of relaxation in contrast to exercises in antenatal care; however, there still remains much diversity of thought as to the value of relaxation among obstetricians, physical therapists, and midwives. It is believed by several that relaxation taught and practiced before the time of delivery will facilitate labor by offsetting the vicious circle of fear, anxiety, tension, and pain during labor.

In physical therapy the teaching methods and technics differ greatly making it difficult to evaluate the effect of the antenatal exercise program. There is also a question of suitable criteria for evaluation of the program. There is a great need for further study in this area.

Climate and Asthma

Harry Swartz (Roosevelt Hospital, New York), NEW YORK STATE J. MED., 57: 273-276, Jan. 15, 1957

The observations on the relation of climatic factors and asthma recorded through the centuries and in our time are paradoxic. The relationship of the two is extremely complex. Climate is a composite of multiple meteorologic factors, such as temperature, humidity, barometric pressure, wind, and evaporation. Because of the allergic nature of some types of asthma, the airborne elements, such as dusts, pollen, and mold become an integral part of climate. The asthmatic patient is highly individual from the point of view of etiology. In general, asthma may be atopic, bacterial, or physical or any possible combination of these categories.

Barometric pressure, particularly a falling barometric pressure, has long been considered injurious to the asthmatic and today the consensus among allergists is that prestorm weather adversely influences many asthmatics. On the other hand, many asthmatics remain unaffected by such weather, so that no general rule can be made. The direction and velocity of wind have also been noted to induce attacks of asthma. This may be due to an allergy to cold or often to airborne particles which may be carried long distances by the wind.

Clinical evidence indicates that humidity with its excessive moisture is difficult for a great many asthmatics. Fogs notoriously produce difficulty. Conversely, the pollen asthmatic will often find his greatest relief during very humid weather and rains. Also, many asthmatics suffer because of lack of humidity, i.e. from an excessively dry atmosphere.

Temperature is a troublesome climatic factor to asthmatics with a physical allergy who react to heat and cold, particularly sudden changes from one to the other. Sun sensitivity is sometimes the cause of trouble. In Europe high altitudes

reportedly have a salubrious effect, but this does not seem to be the case in the United States.

Although many explanations have been advanced, the physiologic dynamics in response to climatic factors remains obscure. Since the etiology of asthma varies so greatly among patients, few generalizations can be made in regard to this relationship. Such varied etiology and complexity of climate necessitates a highly individual approach to climatotherapy of asthma.

The Ventilatory Response to Exercise in Patients with Mitral Stenosis and Its Relationship to Circulatory Dynamics

C. L. Ebnother, A. Selzer, and T. V. Feichtmeir (Veterans Administration Hospital, San Francisco, California), AM. J. M. SC. 233: 46-54, January 1957

The relationship between pulmonary ventilation and oxygen consumption has long been considered an index of the efficiency of pulmonary function. In normal persons oxygen consumption increases more with exercise than pulmonary ventilation. In certain pathological states, an abnormal response is observed, in that pulmonary ventilation and oxygen consumption increase in the same proportion or, ventilation increases more than oxygen consumption.

This investigation was undertaken for the purpose of correlating ventilatory response to exercise with circulatory dynamics in patients with mitral stenosis in whom the clinical disability may be associated with an inability of the cardiac output to rise adequately with exercise.

The patients were studied with a cardiac catheter in place. Determinations were made of cardiac output, oxygen consumption, and oxygen content of blood. Mild slow speed exercise was performed for periods of 7 to 15 minutes in a recumbent position. Total ventilation at rest and during exercise was calculated. Thirty one patients were started.

The study showed that the resting value of the oxygen removal ratio is slightly lower in patients with all types of mitral stenosis than in those with no cardiac disease. Exercise, however, brings about a differential change in this ratio between milder and more severe cases. In mild cases the ratio increases with exercise to a degree slightly less than in the normal. In severely involved patients the pattern is reversed and there is a slight fall in the ratio. This abnormal response could be correlated with the degree of dynamic alterations due to mitral stenosis as expressed by elevated pulmonary arterial and pulmonary "wedge" pressures. No relationship could be found between the abnormal ventilatory response and the changes in cardiac output induced by exercise. It is concluded that the change in total pulmonary ventilation in relation to oxygen consumption induced by exercise does not provide a specific test for various types of cardiac disorders. The abnormality in the ratio merely reflects an altered pattern of breathing which occurs frequently in patients with exertional dyspnea.

The Facts and the Feelings

Dwight V. Swain (University of Oklahoma, Norman, Oklahoma), MISSISSIPPI VALLEY M. J., 79: 46-52, January 1957

This is one of many interesting articles on medical writing appearing in the January issue of this journal. This particular article was presented at the Workshop on Medical Writing, 13th Annual Meeting, American Medical Writers' Association, September 1956.

The author states that your first and biggest problem as a writer is that of writing primarily for somebody else. You are trying to convey information to another human being, trying to breach the barrier that separates man from man. To make a success of writing you are going to have to utilize both the facts, and the feelings. The facts are important, they are the foundation of a paper. But if you hope to meet your competition (other manuscripts and activities) and put these facts across in spite of it, you have no choice but to write with feeling, as well as accuracy. First, you get your raw material out into the open, down on paper and organized. Then, you pinpoint your audience and your purpose. Audiences or readers differ, and purposes differ. You need to know what you are trying to do, and for whom you're trying to do it. Finally, you write and revise so that the audience cannot resist reading the article. The secret of effective writing is mastery of detail—the hundreds of little points of technic that together make up the craft of writing. The author lists seven principles to help you strengthen and improve your writing.

1) Break up your copy. Use short words, short sentences, and short paragraphs. Make your article physically more attractive. 2) Personalize your writing. Get away from the flat, deadly-objective, third-person-if-it-kills-me style. 3) Make your copy move. Use action verbs. Avoid using the verb "to be" whenever you can, and replace it with something more dynamic. 4) Bring your copy down to earth. Make it specific and concrete, explicit. Steer clear of the abstract and general. 5) Vary sentence structure. The simple declarative sentence is a fine thing but don't feel that you always have to use it. Throw a participial phrase up front occasionally, or use provocative questions. 6) Illustrate your article —not particularly with pictures, but with word pictures, anecdotes, thumbnail sketches or case histories. 7) Liven up your copy. You can work in pinpricks of interest or attention-catching devices, contrast, humor, figures of speech, quotations, and vivid phrases.

Traction Therapy, A Study of Resistance Forces

Bernard Judovich, and Golda R. Nobel (Philadelphia, Pa.), AM. J. SURG., 93: 108-114, January 1957

This article reviews current methods of traction therapy and attempts to demonstrate that conventional weight traction to the spine by means of a head halter, pelvic belt, or Buck's extension does not exert a stretch force upon the spine and in most instances no stretch upon the paraspinal muscles. The authors feel this is due to the fact that not enough weight is applied to overcome the surface traction resistance of the body segments.

In the cervical spine, traction in the 30 to 45 pound range is the most effective form of therapy for herniated disks or other conditions in which traction is indicated. In the lumbar area, 50 to 100 pounds or more is the most effective range.

A new method of motorized, intermittent lumbar traction is presented in which resistance is eliminated. Clinical observations by the authors suggest that in conditions treated with traction, reflex skeletal muscle spasm may have little to do with the production of pain or, as commonly believed, the establishment of a pain cycle.

Operative Injury to the Accessory Nerve in the Posterior Cervical Triangle

Barnes Woodhall (Duke University School of Medicine), ARCH. SURG., 74: 122-127, January 1957

The superficial course of the accessory nerve in the posterior cervical triangle makes it peculiarly susceptible to injury during operative procedures in this area. Paralysis of the trapezius muscle causes loss of true abduction of the arm above 80 to 90 degrees and diffuse shoulder girdle discomfort. A report is given of 14 cases including one case history. Various aspects of this patient's neurological defect and subsequent course are illustrated by means of preoperative and postoperative photographs. These photographs show the marked atrophy of the superior third of the right trapezius muscle and depression of the right shoulder girdle, failure of scapular fixation precluding abduction beyond 80 degrees, positive abduction test for accessory nerve paralysis, surgical anatomy of the accessory nerve, and the pathological changes. The part that the trapezius muscle plays in the rhythmic shoulder joint movement during elevation, in both flexion and abduction, is analyzed.

In the performance of the abduction test for accessory nerve paralysis the examiner holds the wrist firmly at the side. The patient then attempts abduction against this fixed point of resistance. A positive test is indicated by a flaring of the entire vertebral border of the scapula and a virtual dislocation of the scapula laterally upon the thoracic cage. It is mentioned that abnormal scapular rotation in complete trapezius paralysis, as well as in minimal involvement, may be demonstrated readily by fluoroscopy of scapular movement during this testing maneuver.

The accessory nerve is a relatively pure motor nerve, as the radial and facial nerves, and therefore has the inherent ability to show adequate functional regeneration. Suture or relief of compression force is strongly indicated in these injuries. The surgical approach is described and an excellent reference list follows.

Our Abstractors for May

The following Association members have assisted in the preparation of abstracts for this issue:

Dorothy Brasil	Janice Heidenreich
Dorothy Briggs	Lois MacTaggart
Olena Cole	Margot Trimble
Martha Wroe	Jean Cuthbertson

Book Reviews . . . . .

Regeneration of the Central Nervous System. *Edited by William F. Windell, Ph.D., Sc.D., Chief of the Laboratory of Neuroanatomical Sciences, National Institute of Neurological Diseases and Blindness, Bethesda, Md. Foreword by Pearce Bailey, Ph.D., M.D., Director, National Institute of Neurological Diseases and Blindness. Thirty-three contributors. Cloth; price $9.50. Pp. 311 illus. Charles C Thomas, Springfield, Ill. 1956.*

This book is a collection of the papers delivered at the 1954 meeting of the National Institute of Neurological Diseases and Blindness, and contains also a discussion of the papers, and a comprehensive bibliography. As befits a phenomenon which was long considered an impossibility in human and mammals, central nervous system regeneration is evaluated with the greatest scientific caution. All reported observations are critically examined by the reporters and, in the discussion, by their colleagues. It is called to the attention of the reader at many points that at present, these phenomena are of theoretical importance only. The book in general has an optimistic tone, but on an academic rather than a clinical level.

The material may be roughly divided into three sections. The first is concerned with the data available on regeneration in the central nervous system of fishes, amphibia, reptiles, and birds. There is spinal cord regeneration in fishes; of the amphibia only the early larval stages, and of birds only the younger embryos show this capacity. The two most strongly emphasized reasons for nonregeneration in the other forms or age groups are, first, that mitotic activity of nervous cells ceases at a very early stage, and second, that formation of an obstructive glial scar increases with age and complexity of the organism.

The articles of the next section can be classified as those which discuss basic characteristics and phenomena of the neuron, and those which are concerned with the total reaction of a nervous system subjected to various types of lesions. The first group of papers considers such topics as behavior of neurons in tissue culture, alone, and in presence of certain types of mouse sarcoma, the structure of axoplasm, and the neuroregenerative factor. There is also an interesting discussion of the various types of optic synapses, and of the mechanism of functional optical regeneration in fishes.

The second group includes articles discussing the relationship of age to structural regeneration in mammals, the role of neuroglia and connective tissue in regeneration, the inhibition of glial scars by treatment with pyrogen and hormones of the pituitary-adrenal system, and the relation of structural to functional regeneration. It is shown that partial functional recovery after cord transection has been obtained by means of the most meticulous nursing, in kittens, puppies, and young rats. The animals showing some degree of functional recovery did not always show a corresponding histological picture of regeneration, and this discrepancy is discussed in detail.

The last section of the book deals with evidence for regeneration in the spinal cord of humans. It is remarked on several occasions that the data are so few because of the long prevailing conviction that regeneration in the human central nervous system is impossible. A few cases are mentioned in which a partial restituton of function occurred after urinary bladder infection. This observation agrees well with results in animal experiments in which it was shown that spinal animals treated with pyrogens similar to those released in bladder infections, show far better recovery than the control animals, because of reduction of obstructive glial scar tissue. In this connection, it was stated that no positive information regarding pyrogen treatment in humans can be gathered until such treatment is instituted immediately after injury.

Some of the cases cited were noted to have some functional recovery, only to lose it again a short time later. On autopsy, this secondary loss was found to be due to degeneration caused by compression by glial scar. With today's greater skill in nursing and with not a completely negative attitude toward the possibility of spinal cord regeneration, it is hoped that in the future more and better observations of at least partial regeneration will be reported for patients with spinal cord injury.

Regeneration of the Central Nerv-

ous System which treats its subject in a scholarly but easily readable way and with great scope, is a very valuable book, if it is kept in mind that at the moment its topic is of purely theoretical significance.

Kinesiology of the Human Body Under Normal and Pathological Conditons. *By Arthur Steindler, M.D., Eng. F.A.C.S., F.I.C.S., (Hon) F.R.C.S., Professor of Orthopedic Surgery Emeritus, State University of Iowa, Head of Orthopedic Department, Mercy Hospital, Iowa City, Iowa. Cloth; price $19.75. Pp. 708; illustrated. Charles C Thomas, Springfield, Ill., 1955.*

The author has undertaken a gigantic task in assembling material for a comprehensive treatise of human kinesiology as he has chosen to deal not only with the normal body but also with pathological conditions and with various therapeutic procedures. The result is a 700 page volume, crammed with detailed and authoritative information.

The subject matter corresponds closely to that presented in the author's previous publication *Mechanics of Normal and Pathological Locomotion in Man* (Charles C Thomas, Ill. 1935), although the chapters have been re-arranged, many computations omitted, and new material added. In both publications the author draws heavily on early European (particularly German) scholars, whose outstanding contributions in the fields of anatomy and biomechanics in many respects have not been surpassed in modern times. Material presented by Weber Brothers, W. Braune, O. Fischer, H. von Meyer, H. Strasser, R. Fick, H. Braus, G. B. Duchenne, and others, is found throughout the volume and a large number of illustrations are redrawn from publications by these authors.

The additions incorporated in *Kinesiology*, as compared to the 1935 publication, draws the reader's attention to advancements in the field of kinesiology during the last 20 years. Because more accurate methods of recording are now available, the results of recent investigations are of great significance and their clinical application deserves a careful study by every physical therapist.

Kinesiology of the Human Body will probably be used by many students of Kinesiology as an encyclopedia, to be kept within reach for ready reference; it will hardly be read from the first to the last page by anyone. If a particular subject is under investigation, much benefit will be derived from using this book as a starting point. In many instances, however, it is essential that the source material be consulted for clarification. Since so many different investigators and authors are quoted, it is perhaps inevitable that conflicting material and viewpoints appear, and this is rather disturbing to the inexperienced student. For this and for others reasons, the book is not well suited as a textbook in kinesiology for undergraduate students of physical and occupational therapy. The discriminating instructor, however, will find a wealth of material in this book and selected parts may be assigned to students for reading.

It is regretfully noted that some of the common textbook confusions have not been clarified. For example, when erect posture is discussed, Braune and Fischer's "Normalstellung" is used in the sense of "normal posture," although these investigators employed it only as a convenient position for the establishment of a three-dimensional system of coordinates, with the frontal reference plane passing through hip, knee, and ankle joints. As a matter of fact, this position corresponds to that of a cadaver frozen in the supine position, but not to a live subject standing erect. The latter posture is referred to by above scholars as "Bequeme Haltung" (comfortable posture), and corresponds to the "standing at ease" posture described by other investigators. The author of *Kinesiology* is probably aware of this, since in another section of the book rotary forces acting at the ankle are discussed in accordance with conditions appearing when a person stands "at ease". The average student, however, even if consulting different sections of the book in search for clarification, would probably end up with a big question mark.

In the section which discusses types of leverage found in the human body, rising on the ball of the foot is given as an example of leverage of the third order, with the resistance (body weight) between fulcrum (toe joints) and the force (calf muscles). It is rather difficult for this reviewer to understand how this applies, since in order to maintain balance it is necessary for a subject first to shift the weight forward over the ball of the foot before the heels can rise off the ground. The resistance would then no longer be located between the fulcrum and the force.

It would, however, be most unfair to use above details as a criticism of the book as a whole. The author has rendered a tremendous service in collecting and organizing extremely valuable material and in interpreting scientific data for clinical use. Because of his long experience as an orthopedic surgeon and as a professor of orthopedic surgery he is highly qualified to write a book of this kind.

Clinical Orthopaedics: Volume 7: Tumors of Bone. *Edited by Anthony F. DePalma, M.D., and a Board of Associate and Advisory Editors. Cloth; price $7.50. Pp. 354; illus. J. B. Lippincott Co., Philadelphia, 1955.*

This volume covers certain aspects of bone tumors, a few problems in general orthopedics, and devotes an entire section to motorist injuries and motorist safety. The section on bone tumors is presented clearly with excellent illustrations and adequate pathology and roentgen information. This section would be of only general interest to the physical therapist.

The remainder of the book is well worth the therapist's review and, particularly, the article on congenital scoliosis.

The book has a good bibliography, an excellent table of contents, and the print is easy to read.

Guides to Action on Chronic Illness. National Health Forum 1956. *Paper; price $1.00. Pp. 88. National Health Council, New York, 1956.*

This is the report of a series of speeches and panel discussions of the 1956 National Health Forum conducted annually by the National Health Council, and held in New York City.

The report is divided into eight sections under the headings of the national picture, guides at a glance, home care, institutional care, the outreach of rehabilitation, costs, role of the Health Department, and community action.

The report states that the over-all problem is how best to manage the 5,500,000 persons in this country who have chronic illness serious enough to require professional care. The over-all challenge is how to elicit sound and lasting motivation for the maintenance of good health,

both on the part of the public and the associated professional personnel.

The data given herein appears to be most useful to local government administrators. The format makes the report interesting reading for all concerned with chronic illness, something which cannot be said for many of the previous reports on this topic.

Youth: The Years from Ten to Sixteen. *By Arnold Gesell, M.D., Frances L. Ilg, M.D., and Louise Bates Ames, Ph.D. From the Gesell Institute of Child Development and the Yale Clinic of Child Development. Cloth; price $5.95. Pp. 542. Harper & Brothers, New York, 1956.*

Take *Infant and Child in the Culture of Today* (1943), add *The Child From Five to Ten* (1946), turn to the present volume, and you have a picture of birth through adolescence. It is not without significance that the first 10 years were described within a 3-year period, while 10 years were to elapse to cover the 10 to 16 age period. The "core-group" of 115 children, "seen repeatedly throughout adolescence" comprised children seen up to 10 years, plus "siblings and age-mates." To these were added samples of 50 children observed at each age. Altogether in this mixed serial and cross sectional study from 60 to 88 children were seen at each age. In general, as relates to family background "the socio-economic status . . . was generally favorable." Most of the children were high average to superior in intelligence. The behavior characteristics studied ranged over a wide area, combining "both incidental and controlled forms of observations." Children and parents were interviewed.

A very important consideration in using this book as a guide is the recognition that chronological age is used only as a concession to popular usage. The authors warn, for example, "that the outlines of the maturity profiles are blurred, for not all our 12 year olds are 12 in a behavioral sense." Hence, there are three major categories to be evaluated: maturity profiles, maturity traits, maturity trends. Together, these "constitute a flexible frame of reference which may be used to consider the maturity status and the developmental progress of a given child at a given age." With this in mind there is a final caution that developmental sequences will be envisaged "in terms of yearly age *zones* rather than exact birthdays."

The sum of the foregoing is simply this: *Youth* is not a rigid framework which says, in effect, the child at 11 is thus-and-so, at 12 this-and-that, at 13 the other-and-more. A given child, referred to the data in *Youth*, falls within a maturity pattern that approximates an age rather than precisely equals it.

In this book the authors use "growth" and "development" interchangeably. The child, organically speaking, has developmental cycles which "apply equally to the physical and mental aspects." Structurally and functionally the growth process is that of a *growing action system*. There is developed a concept of a growth gradient: "a codification of the series of stages of maturity by which the individual (here, the youth) progresses toward a higher level of functioning." The essence of the authors' approach is, it seems to the reviewer, a remarkably objective one: it is dynamic; it is nonrigid. The integrity of *individual* growth progress is guaranteed. In pursuance of the theme of what they call "variations of individuality" several sets of factors are considered: sex differences; physique and temperament; mental traits; intelligence; giftedness; style of growth.

Chapters Four through Ten furnish a maturity profile and maturity traits for each year, 10 through 16. Here are the whole realm of maturity indicators against which a single child may be appraised. Then follow Chapters Eleven through Nineteen which, in order, evaluate, on an age-to-age basis, total action system, self-care and routine, emotions, the growing self, interpersonal relationships, activities and interests, school life, ethical sense, and philosophic outlook. A final chapter, "A Postscript Addressed to Youth," stresses the value of a philosophy of growth oriented to each child's concept of self as related to time and space and death and diety.

This is a well written, carefully outlined, conservatively drawn book. Adults, parents, teachers, all who work with children should regard it as a guidebook. Children may well peruse it as, in good effect, a mirror of self, both of the now and of the emergent future years ahead.

Is Your Child Really Fit? *By Bonnie Prudden. Cloth price $2.95. Pp. 182; illus. Harper & Brothers, New York, 1956.*

Physical fitness or lack of it has become a much discussed topic today. So in this timely book, the author relates how she and her associates became aware of the lack of physical fitness in American youth and goes on to report on tests for physical fitness given the youth of both the United States and Europe. The Kraus-Weber Tests for Minimum Muscular Fitness were given to 4,264 children in the United States and to 2,879 European children. In the former group 57.9 per cent of the children failed the test as opposed to 8.7 per cent failures in the European group. The high economic status of this country, which has provided many luxuries and a high degree of mechanization, is cited as a cause of this lack of fitness. In the United States physical activities have proportionately diminished while European youths continue to indulge in gymnastics, sports, and other muscular activities that were so much a part of the pioneer days of this country. The author suggests methods whereby the schools, the parents, and youth organizations can improve the general fitness of the young people. Basic exercises for all members of the family are presented with 83 charts and drawings.

The results of the tests were brought to the attention of the President, who considered the situation critical and appointed a committee to hold the White House Conference on Physical Fitness. Plans for school and community action were formulated to provide immediate and systematic action to improve muscular fitness. It is hoped that realization of these plans will come about in the near future.

Every parent, teacher, and school authority should read this book and become familiar with the prevailing situation, and the physical therapist and physical educator should become aware of the parts they will have to play in future programs for muscular fitness. Keeping our children physically fit will help them to meet physical or emotional crises in their lives and will vastly improve our national health picture.

The reviews here published have been prepared by competent authorities and do not represent the opinions of the American Physical Therapy Association.

(Please turn to page 297 for the names of our book reviewers for this issue)

What's New . . . . .

For more information on items write to The Physical Therapy Review, 1790 Broadway, New York 19, N. Y.

New items which may be of interest to physical therapists will be mentioned in these pages each month. The accompanying explanations are made by the manufacturers and have not been investigated by the *Physical Therapy Review.*

50. Inval-Aid Chair

The Inval-Aid chair, the manufacturer states, is a dramatically new and different invalid wheel chair that converts to a litter. It is designed for crippled patients and, unique among its features, is the fact that the patient's position may be changed and set at any desired angle from full horizontal, as illustrated, to erect sitting (see below). The change is made smoothly effortlessly by a geared crank. The footrest may be separately adjusted to a variety of positions. Its metal parts are chrome steel and the foam rubber padding is covered. Restraining straps are available. Hausted Manufacturing Co.

51. Ankle-Action Tripod Cane

New Tomac Ankle-Action Tripod Cane provides three point contact with the ground and, according to the manufacturer, will not slip even on irregular surfaces. Flexible rubber washer at cane's base supplies "ankle action": it permits feet to grip surface firmly even while shaft is at varying angles. Patient can apply full weight with complete confidence; he can safely extend cane as far as 30 inches from his feet. Anodized aluminum, cane has a test strength of 250 lbs. Three rubber tips on tripod points; 39 inches long with base — can be cut to desired length. Rehabilitation Products, Division of American Hospital Supply Corp.

Classified WANT-ADS

SUPERVISING PHYSICAL THERAPIST: Direct well equipped department in 150-bed, soon to be 200-bed, hospital. In- and outpatient treatments. Excellent physician rapport. Forty-hr. week, 5 paid holidays, 3 weeks' vacation, staff of 2. Salary commensurate with experience. Apply Mr. John L. Byrne, Lake View Hospital. Danville, Illinois.

PHYSICAL THERAPIST: In Hospital-School for rehabilitation of children with orthopedic handicaps. Complete interesting program. Good salary, merit increases. Annual paid vacation, sick leave, excellent retirement plan. Write to Richard Eddy, Superintendent, Illinois Children's Hospital-School, 2551 N. Clark, Chicago 14, Illinois.

CEREBRAL PALSY CENTER therapist needed to work with children between 5 and 14. One month paid vacation. Salary dependent on experience and training. Write Lowell R. Clark, Program Coordinator, Grotto Educational Center, 2626 South Grand, St. Louis 18, Mo.

QUALIFIED PHYSICAL THERAPIST for staff position in V.N.A. providing generalized service to population of 200,000. Two years supervised work experience in P.T. in hospital desired. Salary commensurate with experience; 40-hour week, sick leave, 30-day vacation, retirement, social security. Apply Director, Visiting Nurse Assoc., 20 Maple Street, Springfield, Mass.

PHYSICAL THERAPISTS (staff or senior) interested in working in New York State contact Mr. Jay Schleichkorn, Director of Clinical Services, United Cerebral Palsy Associations of New York State, 1475 Broadway, N.Y.C. 36.

PHYSICAL THERAPIST: Wide variety of patient treatment in rapidly expanding department. This southern medical school teaching hospital offers annual paid vacation, holidays, sick leave, modern retirement program and excellent social surrounding. Salary commensurate with ability. Write Edith M. Vail, Physical Therapy Department, North Carolina Baptist Hospital, Bowman Gray School of Medicine, Winston Salem, North Carolina.

SUPERVISING PHYSICAL THERAPIST: In Hospital-School for rehabilitation of children with orthopedic handicaps. Complete interesting program. Good salary, merit increases. Annual paid vacation, sick leave, excellent retirement plan. Write Richard Eddy, Superintendent, Illinois Children's Hospital-School, 2551 North Clark Street, Chicago 14, Illinois.

WANTED: ASSISTANT FEMALE PHYSICAL THERAPIST for enlarged department of 400-bed general hospital; salary open. Apply Adiministrator, Shadyside Hospital, 5230 Centre Ave., Pittsburgh 32, Pa.

OPPORTUNITY for qualified physical therapist in 160-bed accredited general hospital. Active orthopedic service. Department has excellent growth potential. For information regarding position and brochures of community and hospital write: Personnel Director, Midland Hospital, Midland, Michigan.

PHYSICAL THERAPIST, interested in cerebral palsy, needed at Children's Orthopedic Center. Work half-day with limited number of cerebral palsy patients; half-day with general orthopedic. Experience desirable but not necessary. Possibility for further postgraduate training. Salary and personnel policies good. Contact: Jewell Radford, P. T. Director, Mary Free Bed Guild Children's Hospital, 920 Cherry, S. E., Grand Rapids, Michigan.

REGISTERED PHYSICAL THERAPISTS for staff positions—Cerebral Palsy Department. Salary $3,840-$4,790—13 working day vacation to start. Retirement, hospitalization, sick benefits. Write Lavinia M. Davidson, Director, Cerebral Palsy Department, New York State Rehabilitation Hospital, West Haverstraw, N. Y.

WANTED: STAFF physical therapist—member of the APTA and/or ARPT; for 350-bed fully accredited hospital. Located on beautiful Long Island Sound, one hour from New York City. Apply Personnel Department, Norwalk Hospital, Norwalk, Connecticut.

REGISTERED PHYSICAL THERAPIST for California State Hospitals in fifteen locations. Starting salaries $4,296 and $4,980, advance to $6,000. Salary increases are being considered effective July 1, 1957. Work with psychiatric, orthopedic and other physical disabilities of varying age groups. Immediate openings for graduates of approved physical therapy schools eligible for California registration. Modern facilities and attractive employee benefits. Write Medical Recruitment Unit, California State Personnel Board, 801 Capitol Avenue, Sacramento, California.

Position Wanted

PHYSICAL THERAPIST (MALE) N. Y. U. graduate; member APTA, ARPT; registered N. Y. State; 4 years' experience including C.P. Desires employment in the Greater N. Y., N. J. Metropolitan area. Address replies to Box No. 51, care of the Physical Therapy Review, 1790 Broadway, New York 19, N. Y.

(continued on next page)

Classified WANT-ADS

RATES

The rate per insertion is $1.00 per line. Typewrite your advertisement carefully and count 50 characters and spaces per line.

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Closing date for copy and cancellations is two months preceding publication date.

Institutions or physical therapists who do not wish their identity known may arrange for Blind Ad Code No. All such want-ads must include the following which will be counted as 2 lines:

Address replies to ..... care of The Physical Therapy Review, 1790 Broadway, New York 19, N. Y.

IMPORTANT

It is understood and agreed that the publisher shall have the right to reject or change the wording of any advertisement which in the opinion of the Editorial Board shall not be in agreement with the ethical standing of this publication.

Classified WANT-ADS

NEEDED: QUALIFIED physical therapist for staff position within agency or for home treatment program. Apply to Director, Curative Workshop, 615 N. Capitol, Lansing, Mich.

IOWA METHODIST HOSPITAL, DES MOINES, IOWA, needs registered physical therapist. Hospital has 400 beds, including 100-bed Raymond Blank Memorial Hospital for Children. Plans under way for construction of 120-bed chronic disease unit. Post-polio cases, in- and outpatient work. Competent professional staff and assistants, excellent working relationships. Apply A. D. Damiani, Personnel Director.

WANTED: Physical therapist for children's convalescent home. Good salary and working conditions with annual increment. Five day, 35-hour week. Completely equipped department. For details write Superintendent, Betty Bacharach Home, Longport, N. J. (Atlantic City).

IMMEDIATE PLACEMENT for qualified staff physical therapist in 335-bed general hospital, well equipped department serving both in- and outpatients; 40-hour week, paid vacations and sick leave. Write Administrator, Lima Memorial Hospital, Lima, Ohio.

QUALIFIED PHYSICAL THERAPISTS for modern physical medicine and Rehabilitation Department in 240-bed general hospital. Complete outpatient and inpatient service. Student program. Salary commensurate with experience; merit raises. Five-day work week with liberal paid vacation, holiday and sick leave benefits. Write P. M. Dept., St. Johns Hospital, 403 Maria Avenue, St. Paul 6, Minnesota.

WORK IN SOUTHERN CALIFORNIA: Physical therapists needed to staff new Rehabilitation Service at Rancho Los Amigos Hospital. All aspects of rehabilitation of all age levels including post-acute and convalescent care of respirator patients, general medical, and orthopedic disabilities and all aspects of bracing and prosthetics. In-service training program under direction of physical therapy instructor. Five-day 40-hour week, holidays, sick leave, vacation privileges, retirement benefits with Civil Service rights. New building and most modern equipment available. Quarters available; laundry furnished. Good beginning salary, annual increases. Write: Personnel Director, Rancho Los Amigos Hospital, Hondo, California.

PHYSICAL THERAPIST for 500-bed general hospital wanted for expanding program. Adult cases only. Social Security, good salary, paid vacation, 40-hour week. Inquire Akron General Hospital, Attention Miss Helen Meida, Akron, Ohio.

REHABILITATION and general medical hospital desires services of additional physical therapists, male or female. Near New Haven, close to Hartford and Waterbury. Fully equipped, air-conditioned physical therapy department. Policies and consultation by Dr. Thomas Hines, Physiatrist-in-Chief, Yale University, Department of Physical Medicine. Physical Therapist-in-Charge, Miss Charlotte Kinney, B.S., R.P.T. Salary open. Personal interview requested. Address Director, Box 440, Wallingford, Conn.

IMMEDIATE OPENING FOR STAFF PHYSICAL THERAPIST (male or female) to assist in well equipped and expanding physical therapy department. Excellent medical supervision. Good salary and liberal personnel policies. Contact Miss Jeanne Burkle, Personnel Director, Butterworth Hospital, Grand Rapids 3, Michigan.

Physical Therapist, STAFF POSITION, male or female. Salary commensurate with experience. Five-day week, liberal vacation, holiday and sick leave. Social Security. Apply Personnel Director, Crotched Mountain Rehabilitation Center for Children, Greenfield, N. H.

QUALIFIED THERAPIST for outpatient rehabilitation center. Salary commensurate with experience. Contact Dr. Eugene Moskowitz, Director, Mobility, 427 Main Street, New Rochelle, New York.

WANTED: QUALIFIED PHYSICAL THERAPIST: 230-bed general hospital, 40-hour week, 6 paid holidays, 2 weeks vacation annually. Social Security, group participation Blue Cross—Blue Shield. Immediate opening—starting salary $400.00 per month with increase of $25.00 at the end of 6 months and one year. Address Administrator, Union Hospital, Terre Haute, Indiana.

PHYSICAL THERAPIST: Some experience in cerebral palsy work to set up a Cerebral Palsy Treatment Center in 325-bed general hospital. Also to assist in general physical therapy duties in established department. Basic salary $4,500 a year. Adjustment depend on experience. Write: Miss Mary Reilly, R.N., Trumbull Memorial Hospital, 1350 E. Market St., Warren, Ohio.

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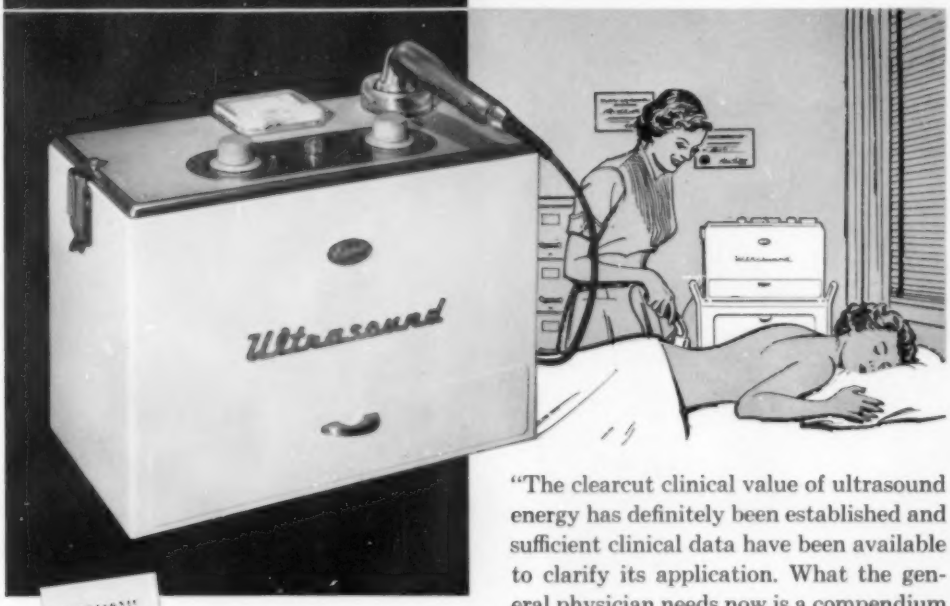

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